FIRST LOOK! WE COMPARE NEW 233-MHz PENTIUM MMX AND PENTIUM II PCs

SPECIAL REPORT
YOU CAN MAKE MONEY ON THE WEB!

# PC WORLD

WWW.PCWORLD.COM

JULY 1997

## Fastest CD-ROM Drives

12X to 18X: Best Buys From $149

## Great PC Deals on the Web

Where and How to Find Top Bargains

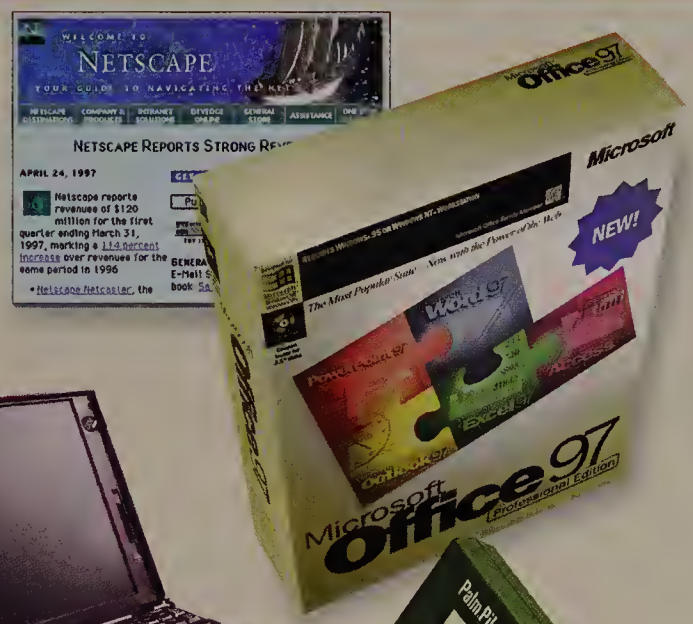
## The Right Modem: 33.6 or 56k?

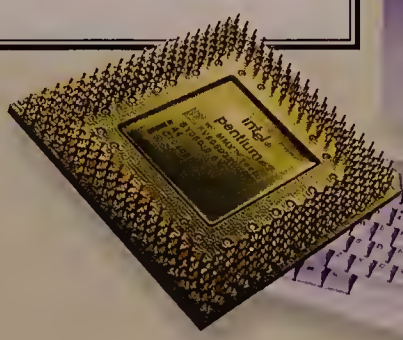
Our Tests Reveal Surprising Winners

THE ULTIMATE BUYERS GUIDE

# BEST PRODUCTS OF 1997

84 WORLD CLASS WINNERS

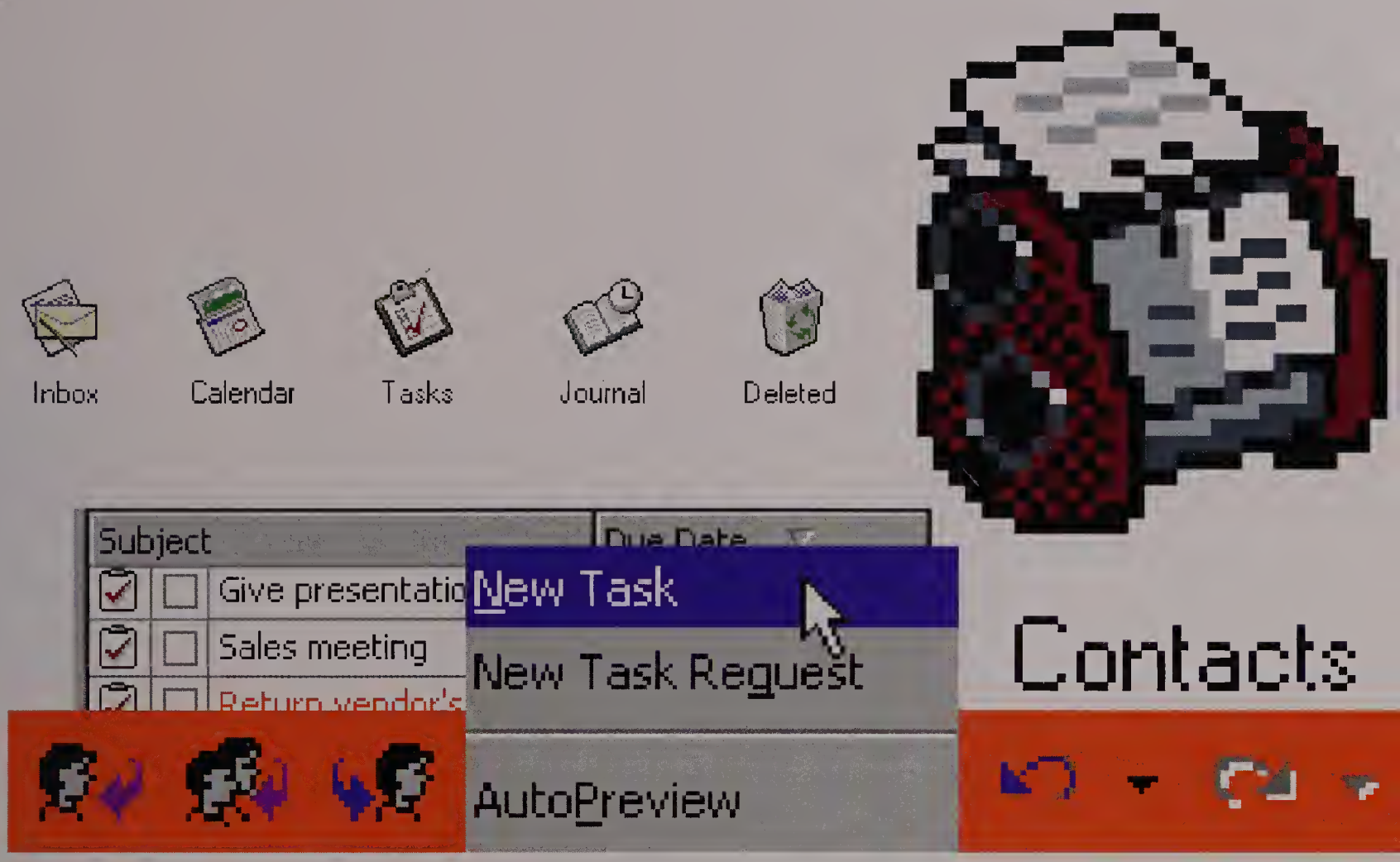




$5.95 ◆ PRINTED IN USA

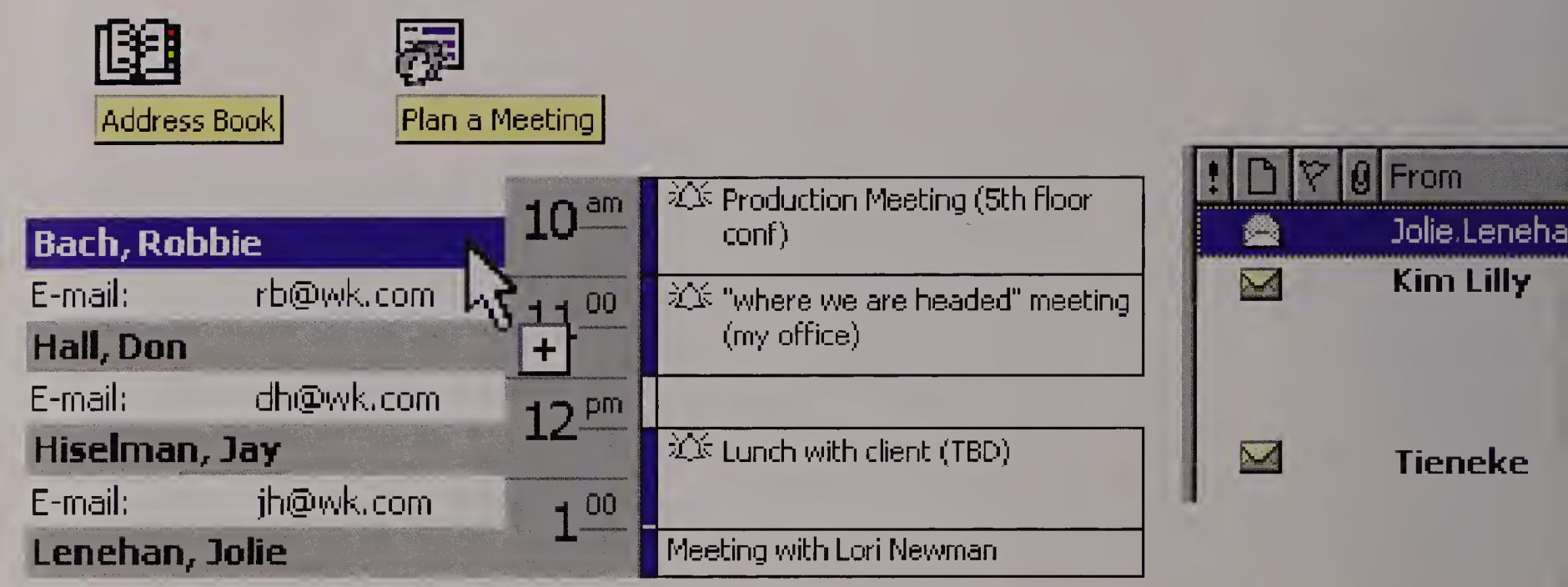
07>

0 70992 37771 8




# it's going to be rea
# to stay disorganized.

©1997 Microsoft Corporation. All rights reserved.
Microsoft and Where do you want to go today? are registered trademarks and Outlook is a trademark of Microsoft Corporation.




# lly, really hard

Some people are inclined to neatly arrange, file, cross-reference and deploy strategic bits of information, like what's-his-name, the guy who sent you the e-mail about the thing on Tuesday... or Wednesday. Well, here's good news for the highly with-it and the chronically disorganized alike: the new Microsoft® Outlook™ 97 desktop information manager. It's part of new Microsoft Office 97, and it's here to help you get organized (or, as the case may be, way more organized). Outlook puts your e-mail, electronic scheduling, "to-do" lists and contacts in one cozy interface. It helps you do smart things, like preview the first three lines of your e-mails to quickly separate news from junk. And you can easily share, link and move information; for instance, drag an e-mail onto the contacts icon and a new contact file is automatically created for you. Now, that's functionality. Want to know more? Block out a little time to visit our Web site.

**Where do you want to go today?® www.microsoft.com/office/** **Microsoft®**

# Microsoft Office 97/now/

| Subject | Received |
| --- | --- |
| FW: Home Essentials | Fri 3/7/97 |

**RE: Hey there!**

Hey guys: I realize you're all looking forward to doing a major presentation at 8:00 A.M., but as it happens, the meeting time has been pushed back to 3:00. So sleep in an extra 17

# HERE'S ONE WAY

# TO GET PHOTO REALISTIC COLOR FROM CANON.

# HERE'S ANOTHER.

Photo-realistic color has always been a focus for us at Canon. Which explains why our latest development in Bubble Jet™ printing is photo-realistic color that's simply incredible. And why, with just a point-and-click, our new Canon Creative 2* software makes it incredibly simple to create everything from greeting cards, to brochures, to T-shirt transfers. For more information about our new line of Color Bubble Jet printers, call 1-800-848-4123. Or visit our Web site at http://www.ccsi.canon.com. You'll find our printers nothing less than simply incredible and incredibly simple.

Canon

*Software available on CD-ROM only. Canon Creative 2 is designed for use with Windows® 3.1 and Windows 95 only. ©1997 Canon Computer Systems, Inc. Canon is a registered trademark and Bubble Jet and PhotoRealism are trademarks of Canon Inc. CCSI, 2995 Redhill Ave., Costa Mesa, CA 92626. In Canada, call 1-800-263-1121.

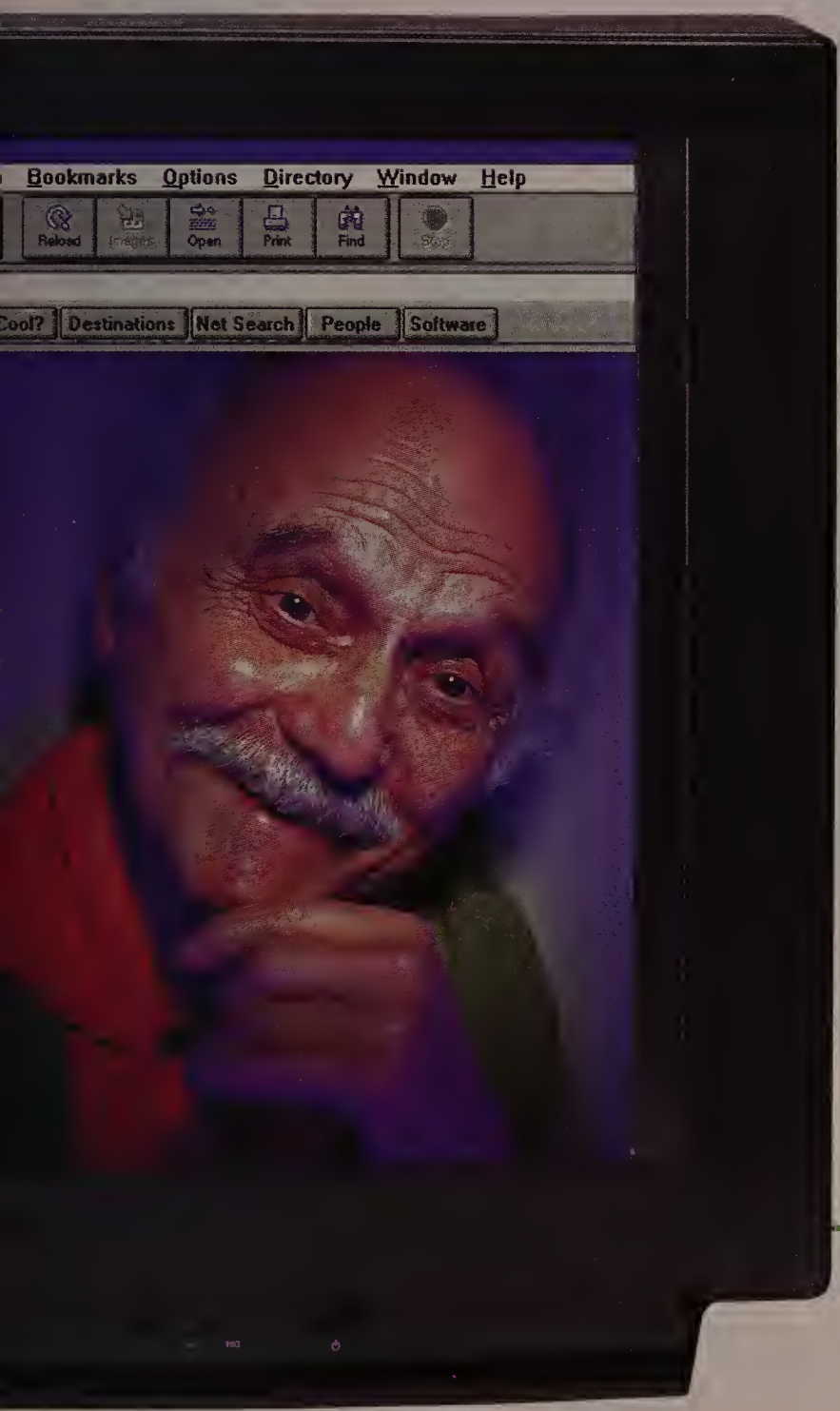
# ITS MOTHER WAS A TV.

*the television*

*The first practical electronic TV was demonstrated in 1927. By the late 1940's, tiny black and white sets were streaming into American homes. Creative designs and ever-larger screens highlighted The Golden Age of Television. By the mid 1960's, color made its debut, and now digital TV is on our doorstep.*

THE BIRTH OF ARCADIA Its heritage is clear, and its impact is astounding. The new Arcadia™ Home Monitor combines television* at its finest with the exceptional clarity and focus of our monitors. Through this unique convergence, Princeton Graphic Systems has created a distinctly new category of displays, destined to bring home entertainment and personal computing to the next level. Make an investment in your future. Don't let your home entertainment center become obsolete. Arcadia Home Monitor is available in 27" and 31"

# ITS FATHER WAS A MONITOR.



*the monitor*

*Early computer "displays" were simple text displays or printed output. Used with mainframes, the first true monitors were rack-mounted behemoths. In the early 1980's microcomputers displayed alphanumerics and jagged graphics in monochrome. Today, monitor technology has advanced to exquisite high-resolution color and full-motion video.*

viewable size versions, priced from $799.** Today, Arcadia is a whole new way to look at things. Tomorrow, it's your window to digital television. Yes, technology is moving ahead, and we invite you to come along.

©1997 Princeton Graphic Systems. All rights reserved. All trademarks are the property of their respective owners. As an Energy Star℠ Partner, Princeton Graphic Systems has determined that these products meet Energy Star℠ Guidelines for energy efficiency. *Television reception requires an external tuner. **Manufacturer's suggested retail price. Actual price may vary.

PRINCETON®
GRAPHIC SYSTEMS

**WWW.PRGR.COM**

**Tel: 800-747-6249 • 714-751-8405**
**Fax: 714-751-5736**
**2801 S. Yale St. • Santa Ana, CA 92704**

**Circle 152 on reader service card**

PC WORLD

# JULY

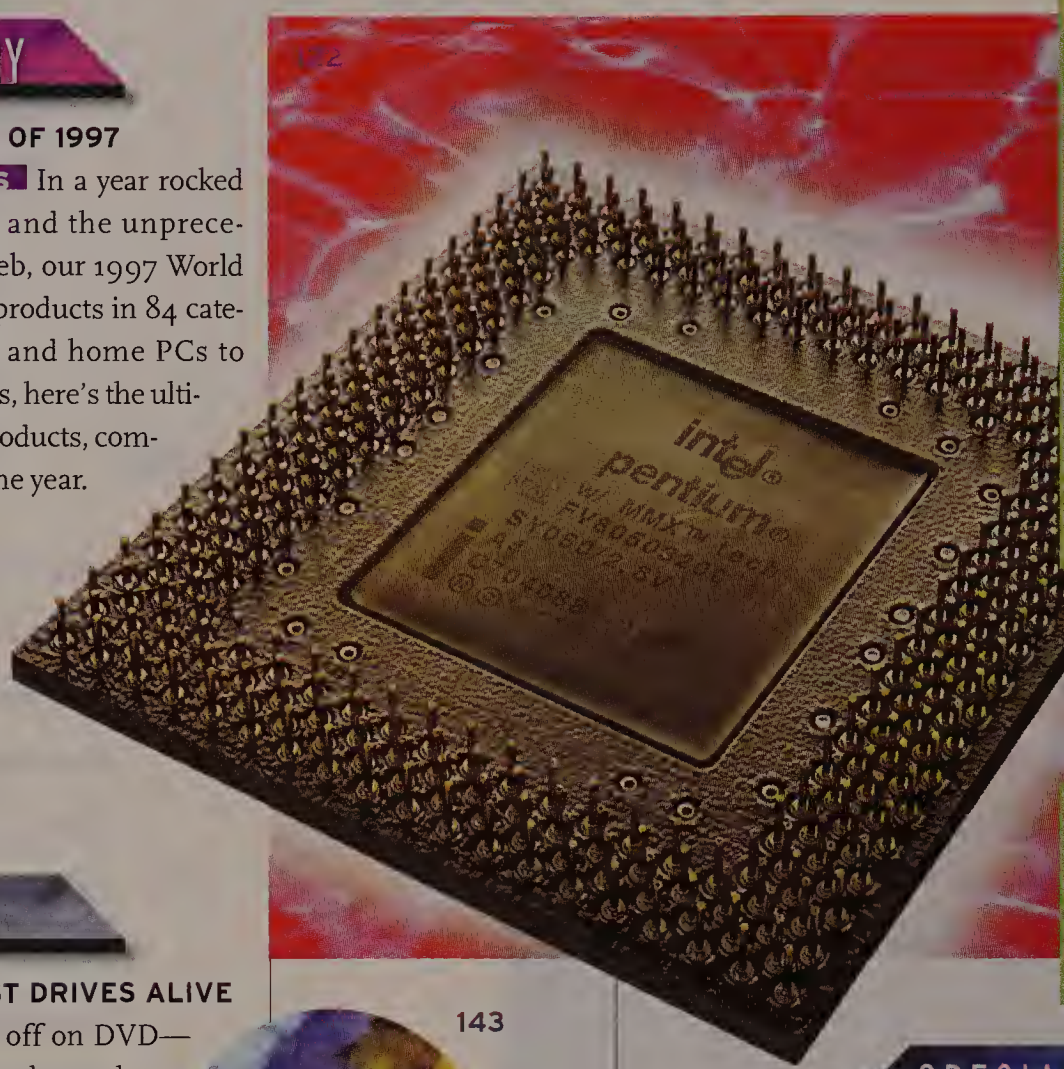
VOLUME 15 ◆ NUMBER 7

## COVER STORY

122 **THE BEST PRODUCTS OF 1997**

WORLD CLASS In a year rocked by new PC processors and the unprecedented growth of the Web, our 1997 World Class Awards spotlight products in 84 categories. From business and home PCs to Internet service providers, here's the ultimate guide to the best products, companies, and services of the year.

124 **@Work: Hardware**
124 **Product of the Year**
126 **@Work: Software**
128 **Work Together**
130 **On the Road**
134 **@Home**
136 **Online**
136 **Service and Support**




## FEATURES

143 **12X, 16X, 18X: FASTEST DRIVES ALIVE**

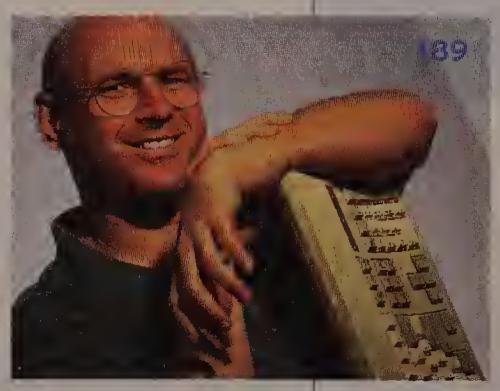
REVIEW Hold off on DVD—CD-ROM drives are better than ever. We tested 12 of the fastest and found two Best Buys: Teac's $149 no-frills 12X workhorse and Plextor's $269 ultrafast thoroughbred.

158 **FIND A GREAT PC DEAL ON THE WEB**

CONSUMER ISSUES It's open 24 hours, makes bargain shopping easy, and has no pushy salespeople bothering you. But will you spend your PC dollars online without a handshake or a human voice? Here's our advice.

173 **33.6 AND GETTING FASTER**

REVIEW 56-kbps is getting all the buzz—but your best bet may still be a 33.6-kbps modem. Our top picks: U.S. Robotics' feature-rich Courier V.Everything and Zoom's all-purpose FaxModem V.34I Plus.



Additional material available on PC World Online: www.pcworld.com

## SPECIAL REPORT

SMALL OFFICE, HOME OFFICE

189 **YOU *CAN* MAKE MONEY ON THE WEB**

More small companies are feeling pressured to get online. But what does it take to make a profit on the Web? From an employment headhunting firm to a rental and relocation clearinghouse, we talked to four companies making money on the Web and found out how they did it.

199 **HOT PICKS FOR THE HOME OFFICE**

Free Internet e-mail from any PC, HP's color printer/fax/scanner/copier, a business plan CD-ROM guide, a handheld label printer, and more.

COVER *Digital Photographs by Ken Smith*

## TOP OF THE NEWS


**58 AFFORDABLE COMPUTERS NEVER LOOKED BETTER**
Not quite ready to shell out $3500 for a flashy 266-MHz Pentium II? Relax. As vendors release new 233-MHz Pentium MMX and Pentium II systems, your choices have just gotten better. The bottom line: Pentium MMX-233 PCs are almost as fast as Pentium II-233s but usually cost less.

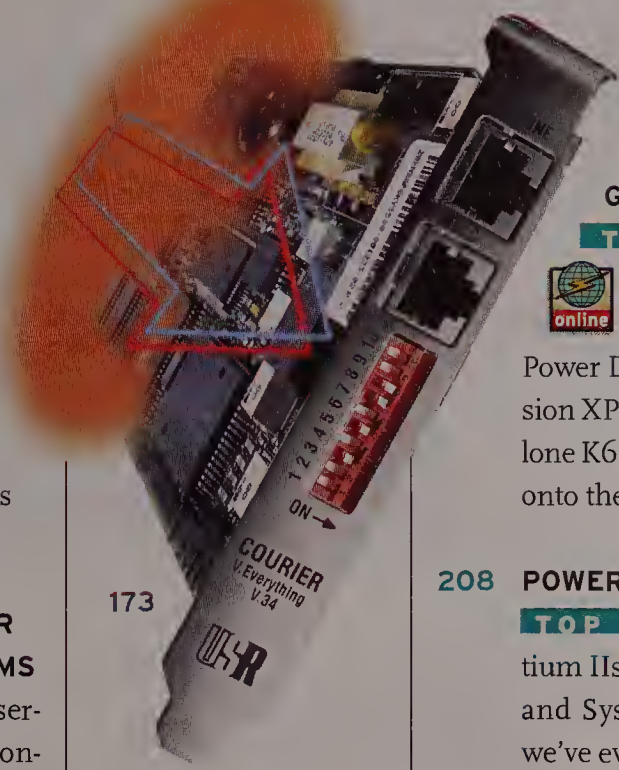
**64 AIRBORNE OFFICE: MODEMS, POWER CONNECTIONS FALL SHORT OF CLAIMS**
Despite advances like in-flight electrical service, tight spaces and slow, unreliable connections will keep your office earthbound.

**66 WIN 97 SOFTWARE SUITES: NO FIX FOR SPEED FREAKS**
With performance improving little or not at all, slick new features may be the only reason to upgrade to Microsoft Office 97 and Lotus SmartSuite 97.

**76 FREE E-MAIL: A VIABLE OPTION**
You can't beat the price of free e-mail, but it pays to be a careful consumer.

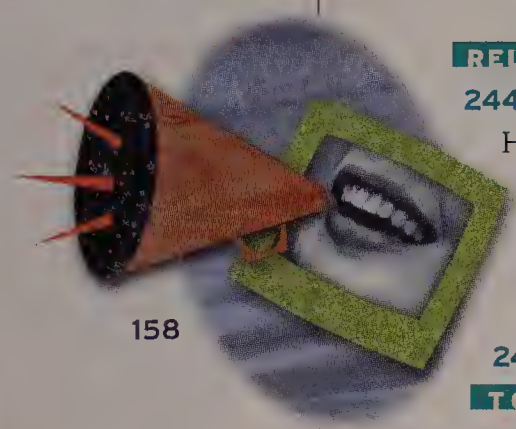

## NEW PRODUCTS


80 Syncronys SoftRAM3
81 Toshiba Libretto mininotebook
82 Epson Stylus Photo, Alps MD-2300 Masterpiece printers
84 Hi-Val DVD kit
84 Video Blaster WebCam
86 PKZip/Quick View Plus utilities
88 Nuts and Bolts utilities package
92 SPSS Smart Viewer
92 SurveyWin
94 pcAnywhere CE
94 mini-PCL3 palmtop light
96 Color Page Wiz, FotoTak-6
106 Matrox Millennium II
106 Alaris QuickVideo
108 Primavera SureTrak 2.0
108 HotDocs Pro
110 Adobe After Effects 3.1
110 Active Presenter
115 Adobe Illustrator 7
116 Exabyte Eagle Nest


173

205



158

58

## TOP 100


**205 PENTIUM II AND K6: GOLIATH VS. GOLIATH**
TOP 100 The new giants in PC processing power have hit our Top 20s. Four new P-IIs made the Power Desktops chart, with the Dell Dimension XPS H266 taking the top position. The lone K6, Polywell's Poly K6200Mx, squeaked onto the Top 20 with a $2569 bargain price.

**208 POWER DESKTOPS**
TOP 20 Big debuts this month: Pentium IIs from Dell, Gateway 2000, Quantex, and Sys Technology, plus the first K6 PC we've ever tested, Polywell's Poly K6200Mx.

**224 BUDGET DESKTOPS**
TOP 20 Budget PCs and MMX power are no longer mutually exclusive as MMX PCs break onto the chart, including the number one Dell Dimension XPS M166s.

**232 NOTEBOOKS**
TOP 20 Newcomers include a Pentium MMX-166 notebook—Dell's Latitude XPi CD M166ST—and two Toshiba Satellites, the Pro 430CDS and the 200CDS.

RELIABILITY & SERVICE SURVEY
**244 WIN AN IBM 350 PC**
How satisfied are you with your PC? Fax in this survey for a chance to win a IBM 350 PC, a Pentium-166 from this month's Top 20 charts.

**247 WORKGROUP PRINTERS**
TOP 10 Lexmark's Optra S 1650 and S 1250 top the monochrome chart with great pricing, speed, and print quality.

**251 17-INCH MONITORS**
TOP 10 Great for graphics pros, ViewSonic's PT775 debuts at number two. Dell's $649 UltraScan1000HS follows right behind.

**255 GRAPHICS BOARDS**
TOP 10 A gamer's dream, the STB Nitro 3D card renders 3-D three times faster.

**257 INTERNAL MODEMS**
TOP 10 U.S. Robotics' Courier V.Everything and the Zoom FaxModem V.34I Plus offer great options in price and features.

## HERE'S HOW


**274 ANSWER LINE**
See if you can move to Win 95/NT; set up a Win 95/DOS dual boot.

**278 WINDOWS TIPS**
Disable Call Waiting; print directory lists; use NT's Task Manager.

**284 SPREADSHEETS**
Tame large Excel 97 worksheets with hyperlinks.

**286 WORD PROCESSING**
Set default formats in Word; enhance type in WordPerfect.

**292 DATABASE TIPS**
Use Access 97's Web-style links.

**296 INTERNET TIPS**
Sort out 56-kbps protocols; print selections from Web pages.

**304 HARDWARE TIPS**
Enhance your PC's current performance with a memory upgrade.

**306 MULTIMEDIA TIPS**
Get started with the right tools for digital video editing.

**308 UPGRADE GUIDE**
Rejuvenate an old PC by swapping in a new motherboard, step by step.

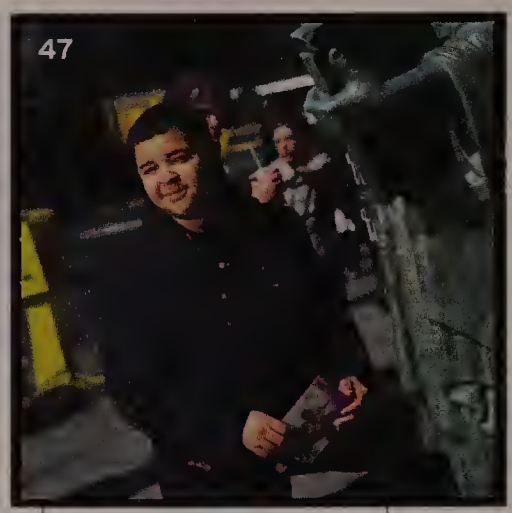

## @HOME

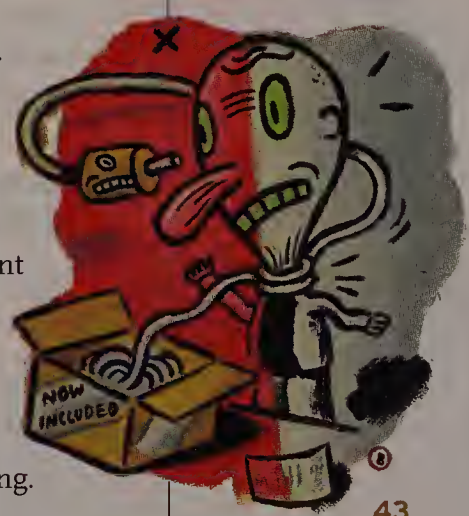

**261 @HOME PRODUCTS**
Professional video editing for amateurs, a gardening CD-ROM for brown thumbs, and funny film trivia.

**262 KEEPING UP**
Web sites and services for consumers.

**264 TOP 5 HOME PCS**
Dell and HP continue to dominate, but IBM's Aptiva C8E is speedy, affordable, and loaded.

**268 HOME OFFICE**
Steve Bass finds a hot CPU he doesn't want.



47



43

261

274

## DEPARTMENTS


**17 UP FRONT** 56K blues.

**23 LETTERS** Readers sound off on paying for freeware, cyberscams.

**25 COMING UP**

**33 CONSUMER WATCH** Online travel.

**43 PCW ADVOCATE** The Fine Print on limited software support.

**47 REAL SOLUTIONS** Easy ISDN.

**53 BUGS AND FIXES** Catch bugs in Office 97 e-mail, First Aid 97.

**352 FULL DISCLOSURE** Will your new PC work like (gasp) a Mac?


## RESOURCES


**14 HOW TO CONTACT PC WORLD**

**316 MAIL-ORDER SHOPPING GUIDE**

**333 PC WORLD CATALOG**

**343 READER SERVICE CARD**

**345 ADVERTISER INDEX**

**347 EDITORIAL PRODUCT INDEX**


## PCW ONLINE

**E-MAIL TO THE POWER OF TEN**
HOW-TO What are mailing lists? How do you join or drop out? Which are the most interesting? We offer advice and more.
www.pcworld.com/e-mail

**WHO YA GONNA CALL?**
REVIEW When your PC's fried, help is here on the Net, for free or a small fee. We review the new breed of tech support.
www.pcworld.com/support

**DOWNLOADING TILL YOU DROP**
Check out thousands of freeware and shareware, plus hundreds of new files every week.
www.pcworld.com/software_lib

**WE'VE GOT GAMES!**
The hippest game site, with demos galore, and reviews of the hottest titles and trends.
www.pcworld.com/games

**ROSE KNOWS**
Our gossip maven, Rose Webstein, dishes industry secrets and the latest tech buzz.
www.pcworld.com/rose

**PC WORLD ONLINE**
www.pcworld.com

SOME PEOPLE
WAIT FOR
OPPORTUNITY
TO KNOCK.

NOW YOU
CAN CLICK ON IT.

www.micronpc.com

Click on www.micronpc.com for easy access to the most up-to-date and detailed information on our award-winning PCs. Take this opportunity to be connected to the latest custom-built computers, special Web site-exclusive offerings and fast technical support. To find the Micron PC to fit your needs, visit our Web site or call us today.

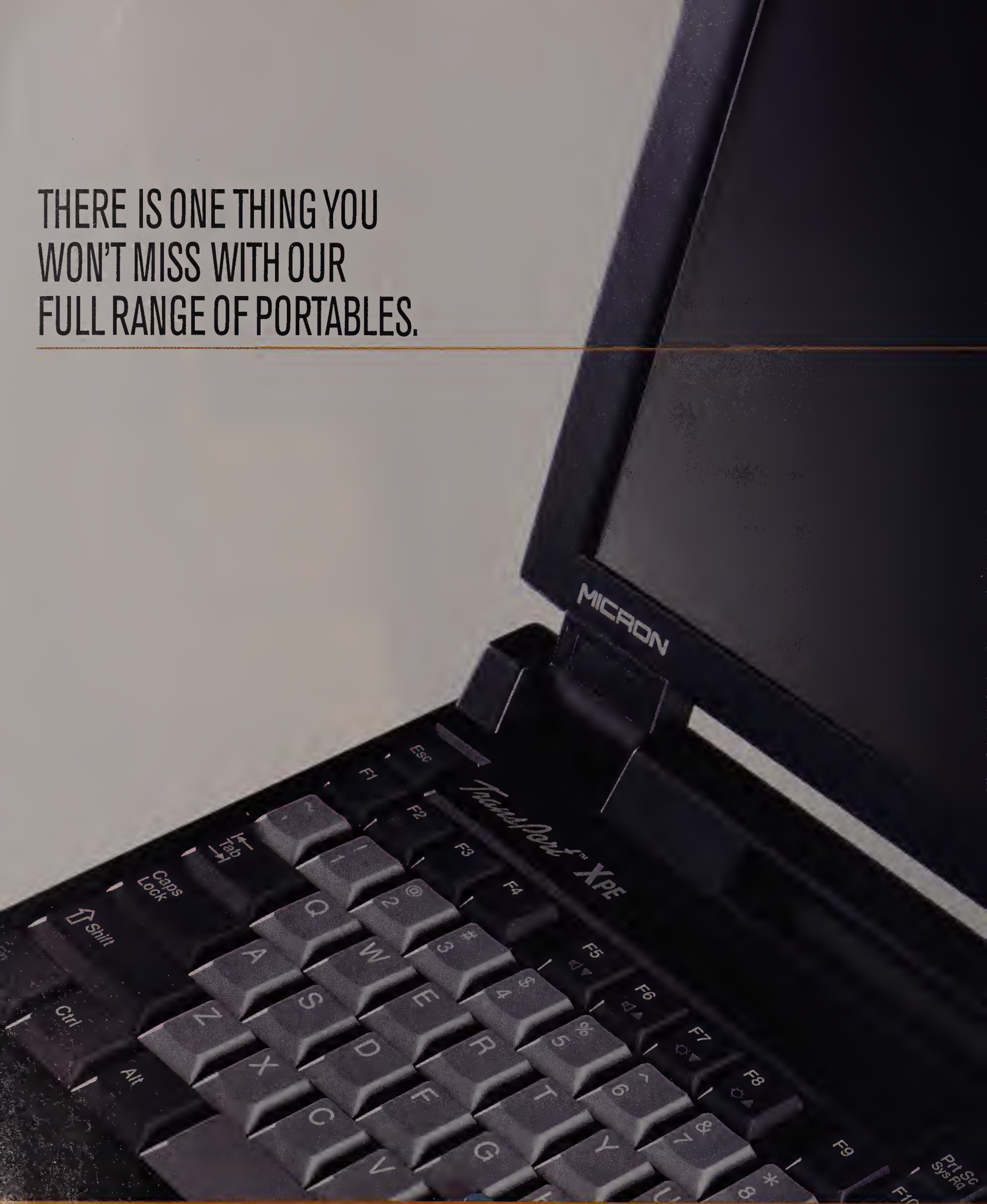
MICRON ELECTRONICS™

800•776•4506

©1997 Micron Electronics, Inc. All rights reserved. Micron Electronics is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice; prices do not include shipping and handling and any applicable taxes. 30-day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All sales are subject to Micron Electronics' current terms and conditions of sale. Lease prices based on 36-month lease. The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, Windows, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation. All other service marks, trademarks and registered trademarks are the property of their respective companies.

Circle 149 on reader service card

# THERE IS ONE THING YOU WON'T MISS WITH OUR FULL RANGE OF PORTABLES.




Micron Sales Hours: Mon-Fri 6am-10pm, Sat 7am-5pm (MT) • Technical Support Available 24 Hours A Day-7 Days A Week
Tollfree from Mexico: 95-800-708-1755 • Tollfree from Canada: 800-708-1758 • Tollfree from Puerto Rico: 800-708-1756 • International Sales: 208-893-8970 • International Fax: 208-893-7393

PC World: Best overall PC company for reliability and service, December, 1996.

©1997 Micron Electronics, Inc. All rights reserved. Micron Electronics is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice; prices do not include shipping and handling and any applicable taxes. 30-day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All sales are subject to Micron Electronics' current terms and conditions of sale. Lease prices based on 36-month lease. The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, Windows, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation. All other service marks, trademarks and registered trademarks are the property of their respective companies.

YOUR DESKTOP.

# YOU WON'T MISS A BEAT WITH MICRON™ NOTEBOOKS.

The Micron TransPort™ XPE notebook is the ultimate in portable, multimedia PC gear for the serious business professional. Superior performance, power and speed with no compromises. The best your money can buy. For a notebook solution offering stand-out performance for the price, go with the Micron TransPort VLX. It packs the most current portable computing punch into a flexible, affordable notebook.

On top of that, both TransPort notebooks bear the Micron name. So your purchase is backed by a company recognized as one of the best for service and reliability.* Get out from behind the desk. Call us or visit our Web site today.

## MICRON TRANSPORT XPE

Intel 430MX Mobile PCI chip set
256KB L2 pipeline burst cache
PCI graphics accelerator, 2MB VRAM
8X modular CD-ROM drive
Pick-a-Point™ dual pointing devices
Sound Blaster 16-bit stereo sound
Built-in stereo speakers and microphone
Motorola Montana 33.6 fax/modem
CardBus- and zoomed video-ready
2 infrared ports, 1 front, 1 rear
S-video and NTSC-video capability
Built-in game port
Management Pak
Executive Travel Pak
2 modular expansion bays (hard drive, CD-ROM drive, 3.5" floppy drive, lithium-ion battery)
Custom nylon carrying case
Microsoft® Windows® 95 and MS® Plus! CD
Microsoft Office 97 SBE CDs
5-year/3-year Micron Power℠ limited warranty

166MHz Mobile Intel Pentium® processor with MMX™ technology
32MB EDO RAM (80MB max.)
2.1GB removable hard drive
12.1" active matrix color display, 800x600
**$4,399**
Bus. lease $150/mo.

150MHz Mobile Intel Pentium processor with MMX
32MB EDO RAM (80MB max.)
1.4GB removable hard drive
12.1" active matrix color display, 800x600
**$3,899**
Bus. lease $133/mo.

## MICRON TRANSPORT VLX

Intel 430MX PCI chip set
256KB L2 pipeline burst cache
PCI bus with 128-bit graphics accelerator
MPEG1 compatible
Touchpad pointing device
16-bit stereo sound
Built-in stereo speakers and microphone
1 rear infrared port
NiMH battery
Modular floppy drive (flexible bay swappable with CD-ROM)
Microsoft Windows 95 and MS Plus!
5-year/1-year Micron limited warranty

133MHz Intel Pentium processor
16MB EDO RAM (40MB max.)
1.4GB hard drive
11.3" SVGA dual-scan color display, 800x600
**$1,799**
Bus. lease $61/mo.

**MICRON POWER℠ WARRANTY**

5-year limited warranty on microprocessor and main memory
3-year limited parts-only system warranty (1-year for TransPort VLX)
1-, 2- or 3-year optional on-site service agreement for Micron desktop and server systems
30 days of free Micron-supplied software support for Micron desktop systems; 3 optional network operating system incident resolutions included for Micron server systems
30-day money back policy
24-hour technical support

The foregoing is subject to and qualified by Micron's standard limited warranties and terms and conditions of sale. Terms and conditions of sale may vary for specific configurations. Copies of the limited warranties may be obtained on our Web site or by calling Micron.

MICRON ELECTRONICS™

Designed for Microsoft® Windows®95

PC MAGAZINE EDITORS' CHOICE FEBRUARY 1997 TransPort XPE P166

Windows Stellar

CALL NOW FOR DETAILED PRICING AND OPTIONS

**Circle 145 on reader service card**

800•245•3709

www.micronpc.com

# There's NO image we can't improve.™

PAGEWORKS 6L

PAGEWORKS 6e

PAGEWORKS 12

PAGEWORKS 20

COLOR PAGEWORKS

No matter what kind of image you have, chances are a little improvement couldn't hurt. To that end, Minolta introduces PageWorks™, a revolutionary line of laser printers for business. Printers that consistently perform better than the competition.

Consider, for example, Minolta's Color PageWorks. It's one of the most affordable true 600 dpi (dots per inch) color laser printers available today. Finally, you can afford to add the impact of color to the documents you print every day. And with a monochrome printing speed of 12 ppm (pages per minute), it may be the only printer your business ever needs.

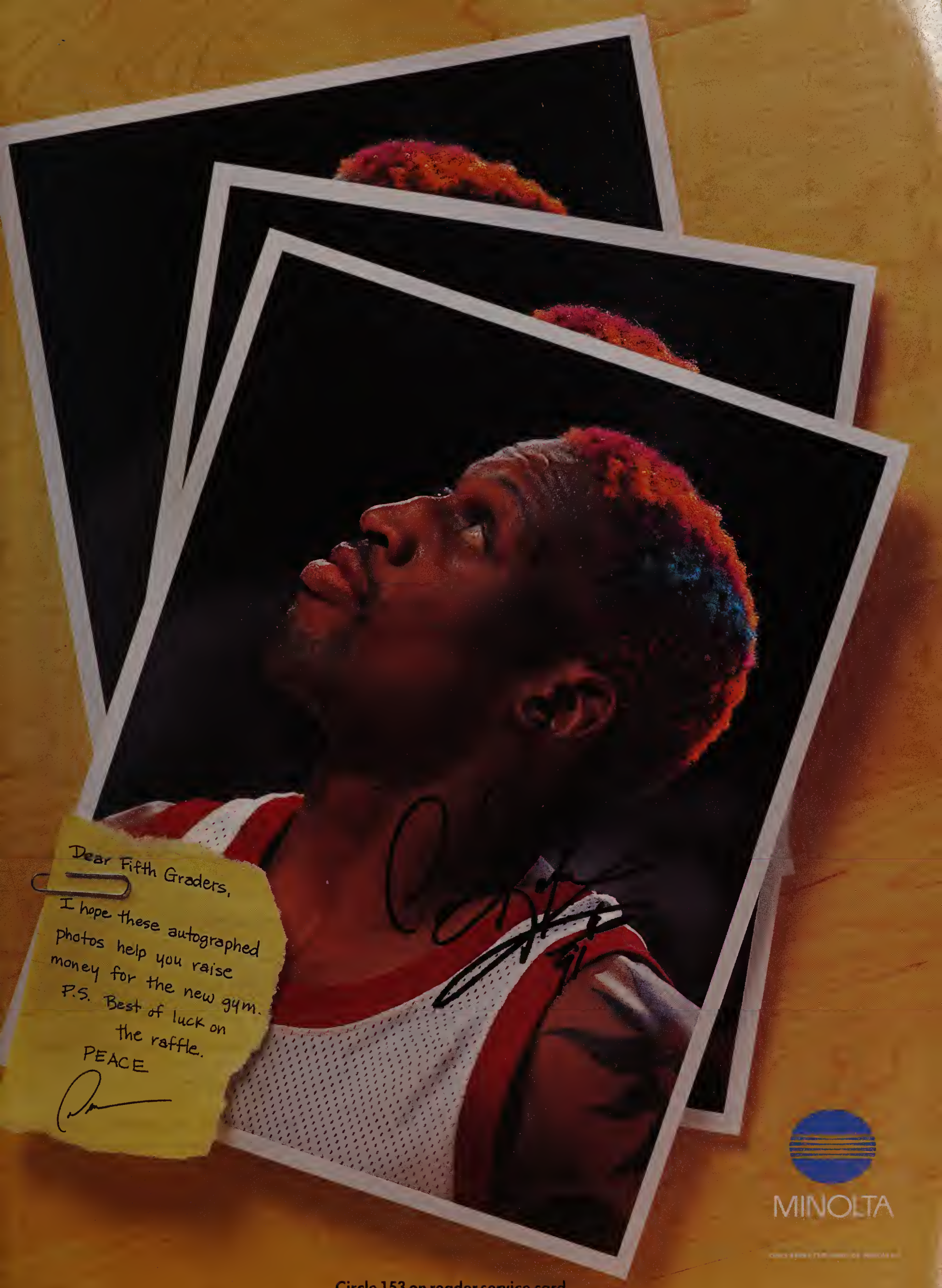
In addition to our remarkable color printer, there's a full line of Minolta monochrome laser printers featuring speeds from 6 ppm to 20 ppm, advanced networking capabilities, and paper capacities up to 1250 sheets. Each is designed for maximum output quality and throughput speed in a high-volume office environment, yet priced for a minimal budget.

COLOR PAGEWORKS

For over 10 years, Minolta has been one of the world's largest manufacturers of laser printer engines. That field-proven reliability allows us to offer a new line of laser printers of unparalleled quality and value.

For more information, visit our Web site at www.minoltaprinters.com/pwd1, or call 1-888-2MINOLTA, ext. 32, and we'll send you a free CD-ROM so you can see for yourself what we can do for your image. Also, see us at PC Expo Booth #2946.

© 1997 Minolta Co., Ltd., Osaka, Japan. PageWorks and "There's NO image we can't improve" are trademarks and "Only from the mind of Minolta" is a registered trademark of Minolta Co., Ltd. All other trademarks or registered trademarks are the property of their respective companies. Information herein is subject to change without notice.




Circle 153 on reader service card

# PC WORLD


## EDITORIAL

**EDITORIAL DIRECTOR** Philip Lemmons

**EDITOR IN CHIEF** Cathryn Baskin

**MANAGING EDITOR** Luis Camus

**ART DIRECTOR** Robert Kanes

**EXECUTIVE EDITORS** Eric Bender, Tracey Capen, Charles Piller, Daniel Tynan

**SENIOR NEWS EDITOR** Michael Desmond
**SENIOR REVIEWS EDITOR** Carla Thornton
**SENIOR TECHNICAL EDITOR** Karl Koessel
**SENIOR @HOME EDITOR** Christina Wood
**EAST COAST EDITOR** Randy Ross

**ASSISTANT MANAGING EDITOR** Anne Kandra

**SENIOR ASSOCIATE EDITORS** Yardena Arar, Rex Farrance, Brad Grimes, Bryan Hastings, Ann Kremers, Michael S. Lasky, Harry McCracken, Laurianne McLaughlin, Lincoln Spector

**ASSOCIATE EDITORS** Melissa Riofrio, JoAnne Robb
**TECHNICAL EDITOR** Shane Rau
**STAFF EDITORS** John Goddard, Eric Hellweg, Aoife M. McEvoy
**ASSISTANT EDITORS** Grace Aquino, Angela Freeman
**EDITORIAL RESEARCHER** Julie Campagna
**EDITORIAL ASSISTANT** Mick Lockey

**SENIOR COPY EDITORS** Barbara Lewis, Marla Miyashiro
**COPY EDITORS** Stephen Compton, Kim Saccio-Kent
**EDITORIAL PRODUCTION ASSOCIATE** Henry Pham

**ASSISTANT TO EDITORIAL DIRECTOR** Linda L. Grubbs
**ADMINISTRATIVE ASSISTANTS** Yvette Joplin, Kalaivani Murugesan

**BUSINESS MANAGER** Heidi Anderson

## ART AND DESIGN

**ASSOCIATE ART DIRECTORS** Barbara Adamson, Tim J Luddy
**SENIOR DESIGNERS** Kate Godfrey, Carolyn Perot
**SENIOR DESIGNER, INFOGRAPHICS** Sandra Kelch
**DESIGNER** Beth Kamoroff
**ASSISTANT DESIGNER, INFOGRAPHICS** Robin Briskin
**PRODUCTION ARTIST** Marlene Tobias

## CONTRIBUTING EDITORS

Steve Bass, George Campbell, Scott Dunn, Roberta Furger, Judy Heim, Richard Jantz, Stephen Manes, James A. Martin, Brian McWilliams, Stan Miastkowski, Celeste Robinson, Richard Scoville, Scott Spanbauer, Kirk Steers

## PC WORLD TEST CENTER

**TEST CENTER DIRECTOR** Julian Milenbach
**MANAGER, PERFORMANCE TESTING** Ulrike Diehlmann
**MANAGER, USABILITY TESTING** Susan Silvius
**PERFORMANCE ANALYSTS** Robert P. James, Elliott S. Kirschling, Jeffrey Kuta, Mike Salayko
**TEST CENTER COORDINATORS** Andrew Hawn, Julian Weatherby

**NETWORK WORLD-PC WORLD TEST CENTER DIRECTOR** William L. Rinko-Gay

## PCW ONLINE

**EDITOR IN CHIEF** Russell Glitman
**MANAGING EDITOR** Kimberly Stein
**EXECUTIVE EDITOR, TIPWORLD** Jim Welp
**SENIOR EDITOR** Yael Li-Ron
**INTERACTIVE SERVICES EDITOR** Dennis Sheridan
**NEW MEDIA EDITOR** Tracy Swedlow
**STAFF EDITORS** Paul Heltzel, Glenn McDonald, Amy Ng, Valerie Ryan

**DIRECTOR, PRODUCTION & TECHNOLOGY** Nancy H. Miller
**DIRECTOR, PRODUCT DEVELOPMENT** Adam Block
**SENIOR PRODUCER** Licia Slimon
**PRODUCER** Jill Corral
**CONTENT ENGINEER** Nick Van Cleve
**PRODUCT DEVELOPMENT PRODUCER** Greg Weinger
**MULTIMEDIA DEVELOPMENT MANAGER** Martyne Pagé

## USER GROUP BOARD

Steve Bass, Pasadena IBM Users Group; Roger Bender, Microcomputer Managers Association; Jack Bolton, Atlanta PC User's Group (APCUG); Brian Camenker, Boston Computer Society; Rollie Cole, APCUG; Mary Dolce, Chicago Computer Society; Sandy Frunzi, Las Vegas PC User Group (LVPCUG); Al Harrison, Houston Area League PC Users; David Hoffman, NYPC; Joseph Rigo, NYPC; Robert Rodrigue, MicroLink PC User Group; Kenny Wynn, LVPCUG

## PCW COMMUNICATIONS

**PRESIDENT AND CHIEF EXECUTIVE OFFICER** Richard J. Marino
**PUBLISHER** J. Samuel Huey
**PUBLISHER, PC WORLD ONLINE** Thomas Gewecke
**VP AND ASSOCIATE PUBLISHER** Jeff Edman
**VP AND CHIEF FINANCIAL OFFICER** Vicki Peilen
**VP, CIRCULATION** Shawne Burke Pecar
**VP, HUMAN RESOURCES** Richard Willoughby
**VP, MANUFACTURING** Linda Manes Goodwin
**VP, RESEARCH** Cheryl Brink

**FOUNDER** David Bunnell
**FOUNDING EDITOR** Andrew Fluegelman


# HOW TO CONTACT PC WORLD

## SUBSCRIPTION SERVICES

PC World Subscriber Services, P.O. Box 55029, Boulder, CO 80322-5029

**INTERNET:** www.pcworld.com/resources/subscribe/customer_service/

**E-MAIL:** pcwhelp@neodata.com

**PHONE:** In U.S. other than CO 800/234-3498
In CO and outside U.S. 303/604-1465
New orders 800/825-7595

## MAIL AND PC WORLD ONLINE

PC World Editorial, 501 Second St. #600, San Francisco, CA 94107

**PHONE:** 415/243-0500 **FAX:** 415/442-1891
**AMERICA ONLINE:** keyword pc world
**COMPUSERVE:** go pcworld
**WORLD WIDE WEB:** www.pcworld.com
**E-MAIL:** letters@pcworld.com

## QUESTIONS AND SUBMISSIONS

Send material electronically to the appropriate online address listed at right or mail it to *PC World*. Include your name, city, and state in all correspondence. We reserve the right to edit letters.

*PC World* pays $50 for published *Here's How* tips and questions; accepted submissions acknowledged by payment. Please note that editors cannot guarantee personal responses to questions that are not posted to PC World Online.

**LETTERS:** letters@pcworld.com
**CONSUMER WATCH:** consumerwatch@pcworld.com
**PCW ADVOCATE:** advocate@pcworld.com
**REAL SOLUTIONS:** real_solutions@pcworld.com; 415/978-3212; 415/442-1891 (fax, Attn: Real Solutions)
*PC World* pays $300 per published column.
**BUGS AND FIXES:** bugs@pcworld.com
**HOME OFFICE:** steve_bass@pcworld.com
**ANSWER LINE:** answer@pcworld.com
**WINDOWS TIPS:** pcwsdunn@aol.com
**SPREADSHEETS:** richard_scoville@pcworld.com
**WORD PROCESSING:** george_campbell@pcworld.com
**DATABASE TIPS:** celeste_robinson@pcworld.com
**INTERNET TIPS:** judy_heim@pcworld.com
**HARDWARE TIPS:** kirk_steers@pcworld.com
**MULTIMEDIA TIPS:** richard_jantz@pcworld.com
**UPGRADE GUIDE:** stan_miastkowski@pcworld.com
**FULL DISCLOSURE:** smanes@ix.netcom.com

## NEW PRODUCT ANNOUNCEMENTS

Please address press releases to *New Products* at *PC World*, or call 415/978-3212.

## REPRINTS AND PERMISSIONS

You must have permission before reproducing any material from *PC World*. Write to *PC World*, Reprints and Permissions, 501 Second St. #600, San Francisco, CA 94107; include a phone number. To order reprints of your company's editorial coverage in *PC World*, call 612/582-3810.

## BACK ISSUES

*PC World* issues and article copies are available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 800/521-0600.

## MAILING LISTS

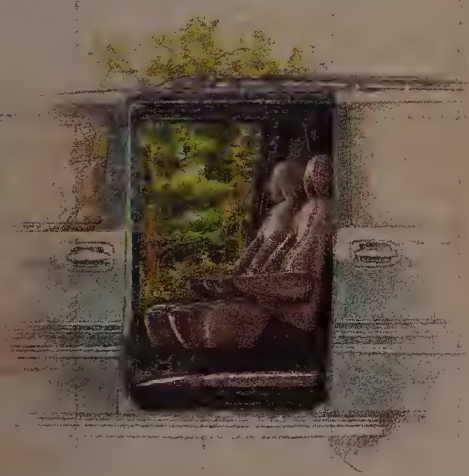
Occasionally we make our subscribers' names available to other companies whose products may interest you. If you wish to have your name excluded from these mailings, send a request with your mailing label to Subscriber Services, P.O. Box 55029, Boulder, CO 80322-5029.

# CREATURE COMFORTS FOR EVERYONE

*It even gets the door for you.*

*a. Dual sliding doors. The widest opening dual sliding doors in its class* give new meaning to personal attention.*

*b. Power sliding passenger door. Great for easy exits when your hands are full of picnic supplies. Opens with the touch of a button.*



## THE NEW SILHOUETTE /: Oldsmobile :/

*Introducing the minivan that brings personal attention to a whole new level. From a power sliding passenger door that can be activated inside or out to dual sliding doors that make loading easy. Be it boxes or passengers. Add a host of other attentive features, and you have a minivan that makes even the shortest journey a pleasure. What could be more civilized?*

## Silhouette

Oldsmobile

GM © 1997 GM Corp. All rights reserved. Buckle Up, America!
*GLS model shown with available manual sliding driver-side door. Features referenced vary by model. *Excludes other GM products. 1-800-255-6537 www.silhouettevan.com*

**Circle 121 on reader service card**

SCSI for your desktop.

# BONE rattling throughput.

**Do more. Faster.**

**Connect to a**

**SCSI hard drive.**

To get the most out of your PC, you've got to get the most through it. Which is why you need to connect to a SCSI (pronounced scuzzy) hard drive with the world's most popular SCSI card from Adaptec.® Together, they give you pipe-opening 40MB/sec maximum throughput. Considerably more than the 16.7MB/sec in standard-issue PCs. So applications launch faster. Documents save faster. And you get the full benefits of true multi-tasking. Ask for SCSI on your next PC. And watch it kick up some dirt.

**SCSI makes you more productive.**

| | |
|---|---|
| 2.8MB/sec | Without SCSI |
| 6.3MB/sec | With SCSI |

*Hard Disk Average Throughput.†*

**To see the proof, visit www.adaptec.com/dt/pcw.***

We move the information that moves your world.™

adaptec®

*For information by fax, dial 1-408-957-7150. Request document no. 11460. †SCSI drive: Western Digital WDE2170 with Adaptec AHA® 2940UW SCSI card. EIDE drive: Seagate ST52520A. Dell Pentium Pro 200 PCI, 32MB RAM, Intel chip set 82371SB PCI bus master IDE controller, Windows NT® Workstation 4.0. ATI graphics accelerator Mach 64, Adaptec Threadmark™ benchmark 2.0. ©1997 Adaptec, Inc. All rights reserved. Adaptec, Threadmark, AHA, the Adaptec logo and tagline are trademarks of Adaptec, Inc. and may be registered in some jurisdictions. Windows NT is a trademark of Microsoft Corporation, used under license. All other trademarks belong to their respective owners. Always drive responsibly.

# SPECIAL OFFER!

# PC WORLD

☐ **YES!** I want to receive the #1 monthly PC publication with award-winning articles, multimedia and Internet coverage, PC rankings, how-tos, tips & more! I'll pay just $21.97 for 12 issues–69% off the annual newsstand rate.

**Also, please rush my FREE CD-ROM!**

NAME

COMPANY

ADDRESS

CITY / STATE / ZIP

Please allow 6-8 weeks for delivery of your first issue. Canadian and Mexican orders please add $20 USD per subscription for postage plus 7% GST (#R124669680). All other countries send $70.95 USD to PC World, P.O. Box 55029, Boulder CO 80322-5029. Printed in the USA. Savings based on newsstand rate of $71.40.

4MPB7

**69% SAVINGS PLUS A FREE CD**

**PC WORLD CD-ROM**

Loaded with over 60 great Shareware programs and more! This CD-ROM is yours absolutely FREE!

Plug into PC WORLD Online now!
http://www.pcworld.com

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

**BUSINESS REPLY MAIL**
FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

**PC WORLD**
SUBSCRIPTION DEPARTMENT
PO BOX 51833
BOULDER CO 80323-1833

# World Class Awards ...and Headaches

PC WORLD'S 15TH ANNUAL World Class awards honors outstanding products in 84 categories, including two Most Promising Newcomers: Intel's Pentium MMX and Microsoft Office 97. Runner-up for Most Promising Newcomer in the hardware category is U.S. Robotics' x2 56-kbps modem technology. Bravo to 56-kbps technology! And phooey to the most bungled product rollout in years!

Since judges for this year's awards cast their votes in late winter, not much has gone right with 56-kbps technology—not only from a technology standpoint, but more important, from the viewpoint of prospective buyers coping with confusion and "corrected" expectations.

What went wrong? Almost everything. And until problems are straightened out, buyers are left holding the bag. Here's a recap to date:

◆ *Well before 56-kbps modems and services were actually available, advance advertising for the two incompatible technologies—U.S Robotics' x2 and Lucent/Rockwell's K56flex—promised speeds up to twice as fast as "most" modems.*

**In fact,** as almost everyone knows by now (and as the ads eventually acknowledged), both x2 and K56flex modems work at high speeds only when downloading data from an Internet service provider equipped with a compatible server modem. Otherwise, 56-kbps modems run only as fast as 33.6-kbps modems. What's worse, not everyone will be able to achieve speeds close to 56 kbps because of poor-quality phone lines. And in some cases, x2 and K56flex modems won't operate above 33.6 kbps at all because of limitations in the telephone infrastructure. A telling legal note: In April, a California attorney filed class-action lawsuits against x2 and K56flex modem makers, alleging false advertising.

◆ *In early spring, each technology's camp trumpeted widespread adoption of its standard by PC makers, modem makers, and ISPs.*

**In fact,** the availability of products and services for both technologies is still all over the map. Initially, modems were slow to ship because of technical problems. Rockwell, for example, halted shipment of its K56flex chip sets, causing Motorola, among others, to stop shipping its 56-kbps modems less than two weeks after it released them.

What **went wrong** with **56-kbps** technology? Almost **everything.** And **buyers** are left **holding the bag.**

Even now, it's nearly impossible to figure out who's actually selling 56-kbps modems and which ISPs actually provide 56-kbps service in which parts of the country. If you're in the market for a new PC, consider this scenario: You want to buy a Quantex Pentium-MMX PC, which includes a K56flex modem. You subscribe to AOL, which is currently testing x2, though not yet in your city. But you're about to cancel your AOL account and are thinking of switching to Mindspring, which is now selectively testing x2, or to Earthlink, which resides in the K56flex camp. Trouble is, neither ISP can say for sure when it will offer 56-kbps service in your area. Moreover, you don't have the slightest idea if any 56-kbps modem will work at high speeds over your phone lines, though you know your 33.6-kbps connections usually fall back to far slower rates. I'd pass, thank you.

The fight over incompatible technologies will not be resolved until sometime next year, when the International Telecommunication Union recommends a standard.

◆ *To encourage purchases and allay fears about incompatibility, vendors are promising free or inexpensive upgrades to new 56-kbps modems and to the yet-to-be-determined ITU standard.*

**In fact,** many buyers will end up paying $40 to $150 to upgrade 33.6-kbps modems to 56 kbps. Some buyers will have to send in their 33.6-kbps modem, and others are promised a downloadable software upgrade.

Again, problems are surfacing. U.S. Robotics promised a free 56-kbps upgrade to buyers of its 33.6-kbps Sportster modems last winter. But many who took U.S. Robotics up on its offer are getting nothing but jammed phone lines and aggravation due to the byzantine upgrade process and confusion over eligibility.

That's the obstacle course customers face just to upgrade from one manufacturer's 33.6-kbps model to its 56-kbps unit. Imagine the mess next year when massive numbers of buyers try to upgrade 56-kbps modems to the ITU-approved standard.

## NOT WORLD CLASS YET

ALTHOUGH 56-KBPS TECHNOLOGY has its shortcomings, it also has its place—it's one of the few achievable, affordable ways to crack the communications bottleneck we all face every single day. Come on, U.S. Robotics—and the industry—do what you need to have a World Class winner in 1998: Don't oversell 56-kbps capabilities, put superb customer support in place, and deliver on your promises.

*Cathryn Baskin is editor in chief of* PC World. ■

PHOTOGRAPH: ERIK BUTLER

# MMX™ TECHNOLOGY 12.1" TFT, 40MB RAM, 2GB HDD, 33.6 MODEM.

# $2999

**OTHER CONFIGURATIONS AND MODELS STARTING AT $999**

From WinBook, winner of over 100 major awards – the *WinBook LM* gives you the features you want in the highest quality, best value notebook. At $2999, you get an amazing list of standard features including : 12.1" SVGA Active Matrix Screen, 40MB EDO DRAM, 2GB removable Hard Drive, 33.6 PCMCIA Fax/Data Modem, 128-Bit Graphics Accelerator, Intel® Pentium® Processor with MMX™ Technology, 150MHz, Running at 2.5V, and even more features.

**WinBook Special Value Package! Call Now! Limited Time Offer.**

The price of blazing fast multimedia has just hit a new low. Call us now for huge savings on WinBook FX's and Winbook LM's using Intel® Pentium® Processors with MMX™ Technology.

***New* WinBook FX with MMX™ Technology Running at 2.5V (Not Shown)**

- Intel® Pentium® Processor with MMX™ Technology, 166MHz, Running at 2.5V
- 12.1" SVGA Active Matrix Screen
- 32MB EDO DRAM
- 2GB removable Hard Drive
- 33.6 Internal Fax/Data Modem
- 59-Watt Lithium Ion Smart Battery

©1997 WinBook Computer Corporation. All rights reserved. WinBook is a registered trademark of Micro Electronics, Inc. The Intel Inside logo and Pentium are registered trademarks and MMX is a trademark of the Intel Corporat

*WinBook keeps winning...and winning...and winning...and winning...and winning...and winning...and winning...and*

Designed for: Microsoft Windows 95

BYTE — April 1995, WinBook XP Best Value 486DX4 Notebook

Editor's Choice Awards — January 1996 PC Laptop Editor's Choice – WinBook XP, XP5

WWWWW — March 1996 Windows 5 of 5 Rating WinBook XP5

PC WORLD — December 1996 WinBook XP5 P100 16/B10MB DSTN

LAPTOP BEST BUY — Laptop Buyer's Guide April 1997, WinBook LM P133 TFT

*NSTL PC Digest 4-Star Rating* ★★★★ August 1996 WinBook FX P133

# *New* WinBook® LM

**$2999**

**1-800-722-4392**

Mon-Fri 8am-9pm EST Sat 9am-4pm EST

U.S. sales only. 30-day unconditional money-back guarantee from date of purchase.

***New* WinBook LM with MMX™ Technology Running at 2.5V**

- 12.1" SVGA Active Matrix Screen
- 40MB EDO DRAM
- 2GB removable Hard Drive
- 33.6 PCMCIA Fax/Data Modem
- Options Bay accepts CD-ROM, 3.5" Floppy Drive (both included) or Optional 2nd Lithium Ion Battery
- **128-Bit Graphics Accelerator**
- Intel® Pentium® Processor with MMX™ Technology, 150MHz, Running at 2.5V
- 16-Bit Soundblaster Pro-compatible Stereo Audio
- 45-Watt Lithium Ion Smart Battery
- Parallel, Serial, VGA, and PS/2 Port
- Integrated dual-button touchpad
- Full one-year extendible warranty
- Microsoft Windows® 95 installed

WinBook®
COMPUTER CORPORATION

and registered trademarks are property of their respective corporations. All prices and specifications are subject to change without notice or obligation. Prices do not include shipping.

*nd winning...and winning...and winning...and winning...and winning...and winning...and winning...and winning...and winnin*

March 1997 Windows Recommended WinBook XP5/P133

October 1996 BYTE Best Best Value Notebook WinBook FX

June 1997 PC World Best Buy WinBook XP5 Pro

Laptop Buyer's Guide March 1997, WinBook FX P133 TFT

June 1997 Windows Recommended WinBook XP5/P133

August 1996 PC Magazine Editors' Choice WinBook XP5 P100

**Circle 254 on reader service card**

# When we say ViewSonic® will

Shown-Model PT775

**ViewSonic PT813**
- 21" CRT Size
  20.0" Viewable
- Aperture Grille Pitch .28 mm
- 107kHz Horizontal Scan Rate
- 1600 x 1200 @ 85Hz
  Maximum Resolution
- TCO Compliance
- Professional Series

**ViewSonic PT775**
- 17" CRT Size
  16.0" Viewable
- Aperture Grille Pitch .25 mm
- 96kHz Horizontal Scan Rate
- 1600 x 1200 @ 77Hz
  Maximum Resolution
- TCO Compliance
- Professional Series

**ViewSonic GT775**
- 17" CRT Size
  16.0" Viewable
- Aperture Grille Pitch .25 mm
- 86kHz Horizontal Scan Rate
- Optimum Resolution
  1280 x 1024 @ 80Hz
- TCO Compliance
- Graphic Series

# exceed your expectations,

# we've got the guts to back it up.

## Aperture grille technology that rewrites the spec charts.

ViewSonic's PT813 21" (20" viewable) and PT775 17" (16.0" viewable) set a new standard for aperture grille monitors used in professional applications.

A rather large claim. But one we can make without equivocation because we have the technology and the specs to prove it.

Both monitors achieve breakthrough quality in brightness, color saturation and screen clarity (see spec boxes below for eye-popping details).

## Wait, there's more.

After setting the standard for the pros, we did it again for general office and graphic applications. Our new GT775 17" (16.0" viewable) monitor exceeds all your high performance demands with an optimum resolution rate of 1,280 x 1,024 @ 80Hz and a maximum resolution of 1,600 x 1,280 – from design to business presentations to CAD and the Internet.

It doesn't get any better.

And, all ViewSonic monitors are backed by a limited 3 year warranty* on CRT, parts and labor (the best in the business), as well as an optional Express Exchange℠ Service program that insures 48 hour replacements.

*To exceed your highest expectations, call (800) 888-8583 and ask for agent 7547 for the dealer nearest you or visit our website at www.viewsonic.com.*

**ViewSonic®**

(909) 869-7976 Fax: (909) 869-7958 • Internet: www.viewsonic.com • Specifications subject to change without notice • Copyright © 1997 ViewSonic Corporation • All rights reserved
Corporate names and trademarks stated herein are the property of their respective companies • *The 29GA has a one year limited warranty on CRT, parts and labor.

**Circle 224 on reader service card**

visioneer

**Monday:**
Find that expense report from 1993 (the one with the little white lie in it).

**Wednesday:**
Search through records to find receipts justifying expenses. Stand in line to use the fax machine. Curse the AP department.

**Tuesday:**
Sort through 1996 paperwork. File some documents. Photocopy others. Recycle the originals. Repeat process until desk is recognizable.

**Friday:**
Organize marketing research, memos, and sales projections by client, product, and quarter.

**Thursday:**
Spend six precious hours retyping budget proposals that will probably get rejected, anyway.

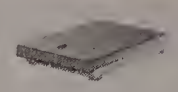
**Weekend:**
Find, retype, and e-mail that newspaper article about the competition to the sales team—in France.

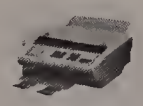
**Monday, again:**
Fax this batch to the boss, his boss, her V.P., and the entire corporate marketing department.

# A new day is unfolding.

## Introducing PaperPort Deluxe Software

It used to be hard to tell where you left off and your messy desk began. Not anymore. Thanks to a new invention called PaperPort Deluxe™ Software, your scanner can now help you tackle the paper that pervades your life. Use ScanDirect™ to scan stuff—even color stuff—directly into your favorite applications. Use FormTyper™ to scan in and fill out forms. File paper into folders up to 5 levels deep. Then find things using SimpleSearch™. Xerox TextBridge™ OCR software is included for easy editing. And PaperPort Deluxe works with Windows 95 and Windows NT, to boot.





For flatbed scanners, sheetfed scanners, multi-function peripherals, and digital cameras—or most TWAIN-compliant devices.

**FOR FAST RELIEF:**

Call 1-800-787-7007, extension 213 or contact an authorized reseller.
Visit our web site at **http://go.paperport.com**

Copyright © 1997 Visioneer, Inc. All rights reserved. The Visioneer logo and PaperPort are registered trademarks of Visioneer, Inc. Visioneer, PaperPort Deluxe, FormTyper, ScanDirect, and SimpleSearch are trademarks of Visioneer, Inc. All trademarks are the property of their respective owners. VIS6091/PCW 7/97

**Circle 187 on reader service card**

## YOUR TAKE ON: Free stuff online ◆ Scams on the Net ◆ Hard disk parties

### SHAREWARE, NOT FREEWARE

ON THE COVER of *PC World*'s May issue, the words "Best Free Stuff Online" were displayed. I would like to point out that shareware is *not* freeware. Shareware publishers are in the business to make money. Many of the programs that I use are shareware. I download them for the trial period, then I pay the fee if the program meets my needs. Many people will read this issue and assume that it is okay to not pay for these programs.

*Jerry S. Caccavaro, Internet*

### ALMOST CYBERSCAMMED

THANKS A MILLION FOR your article "CyberScams" [May]. I recently received a proposal from CBSI and I wholeheartedly believed in the operation. In fact, I recently e-mailed CBSI to take them up on their offer to start a home business with my family. Now that I've seen the light, I'll pass up the "offer" and continue with my hard work. Thanks again!

*Gabriel Ishola, Internet*

### NOT ALWAYS A RIP-OFF: BUSINESS ON THE NET

I FELT YOUR ARTICLE "CyberScams" was one-sided at best. Not everyone selling online is a cheat. In fact, I believe you foster ignorance while trying to alert people to scams.

My parents are neither computer savvy nor business oriented. They read "CyberScams," and using the logic from your article concluded that anyone doing business online is ripping people off and that you can't make money online. I make money online without scamming people, and I make smart purchases online without getting ripped off. Yes, some people do get scammed online and some are simply misguided, but not everything on the Net is a rip-off.

*Joseph P. O'Neill, Internet*

### CYRIX-BASED SYSTEMS SUPPORTED

IN RESPONSE TO May's Top 100 introduction, and the comment "Limited support is one of the primary reasons Cyrix-based machines seldom earn Best Buys in our reviews. Companies that use the lower-cost Cyrix chips are usually relatively small vendors, eager to keep costs down": I am a small, one-person computer company providing mobile computer repair, data loss prevention, and sales of new computer systems. I specialize in the mom-and-pop small-business arena. My entire reason for existence is to provide hands-on economical service to these small businesses.

I recently purchased the new Cyrix P200+ CPU on a new motherboard, with 32MB of DIMM memory and a 2.1GB IDE hard drive—it's loaded. This is a really hot system and is selling very well. I not only sell the computer, I deliver it and set it up—and contrary to your article, I support my clients after the sale.

*John Benjamin*
*West Palm Beach, Florida*

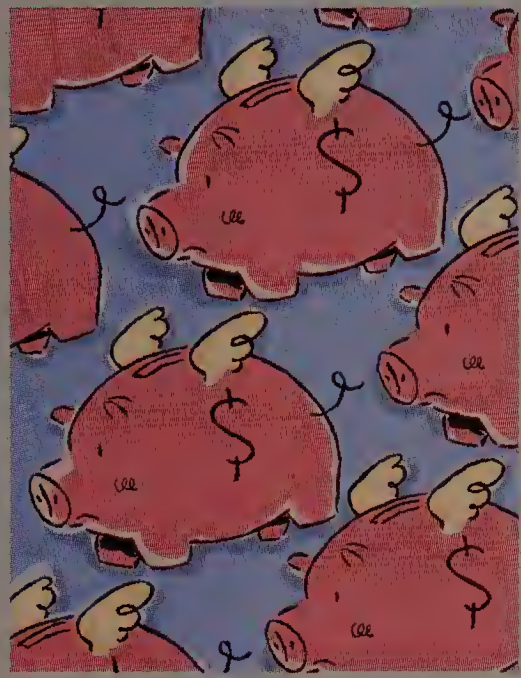
### VOLTAGE AND BIOS PREVENT UPGRADE

I WAS EXCITED to read Kirk Steers's article "Which CPU Is Right for You?" [May], especially the information about AMD's K6. I have a Dell Dimension and have thought about upgrading my Pentium-133 with the K6 chip. I have a ZIF socket so I should be able to replace it easily. But the article seemed to imply that even though the K6 is pin compatible, I would still have problems since it may have different voltage and BIOS requirements. Would you please clarify whether or not I can upgrade my CPU?

*Barry Robertson, Internet* ▶

HOT BUTTON

## AJ's Desktop Themes: Not Free Anymore



I AM ASTOUNDED that you would include AJ's Desktop Themes in your list of "The Best Free Computer Stuff" ["The Best Free Stuff Online," May]. A. J. downloads themes created by other people, changes them to suit his own tastes, fails to give credit to the original creators, charges people to download them, and also puts them on a CD-ROM that he sells. I therefore suggest that you reconsider your recommendation.

*Pat Ames, Internet*

I HOPE THIS is a coincidence, but it seems that after AJ's Desktop Themes (www.desktopthemes.com) got such a nice review in the May issue, they started charging to download their files. Tsk tsk on them.

*David Thompson, Internet*

**Author's response:** We contacted A. J. Russo of AJ's Desktop Themes and got this response: "I began charging access fees in late February of 1997 to cover the cost of upgrading to a full T1, dedicated dual P-100 UNIX server. It was either upgrade or drop the site. The previous server could not handle the amount of requests for downloads, and people were complaining. I do modify most themes to convert them into the space-saving JPEG format. I spend over 30 minutes on each theme standardizing it and making the preview for it, times 630 themes. I put my heart and soul into my site and I really think it shows. So where does the credit go?"

We recommended AJ's Desktop Themes because at the time, it was free and offered several advantages over other similar sites. Since the story went to press, AJ's Desktop Themes has begun charging access fees. We can no longer recommend it as one of the best free sites. —Dylan Tweney

ILLUSTRATION: WARD SCHUMAKER

# THIS 3.3 FT. CABLE AND LENS ARE ATTACHED TO THE DIGITAL CAMERA THAT GIVES YOUR PC A WHOLE NEW OUTPUT!

*(But to see the complete versatility and unlimited capabilities of this amazing digital camera*

*you'll just have to go to your Minolta dealer.)*

Only the Dimâge V has all of these features:
MOVEnZOOM™ Lens with 3.3 ft. cable.
2.7x zoom range.
640x480 resolution.
1.8" color LCD finder/monitor.
Macro focus.
Compact, portable size.
Built-in flash.
Adobe Photo Deluxe™ software.
Unlimited image capacity on removable SmartMedia.™
Everything you need for PC or Macintosh™ computers.

CONSUMERS DIGEST BEST BUY

## Minolta Presents

# Dimâge V

**THE FIRST AFFORDABLE DIGITAL CAMERA WITH THE REMARKABLE, MOVEnZOOM™ ROTATING/DETACHABLE LENS.**

*Only from the mind of Minolta*

MINOLTA

For more Dimâge V information contact:
GO MINOLTA on CompuServe
1-800-528-4767 Toll Free Photofax
fax-back number 24 hours/7 days
www.minoltausa.com

©1997 MINOLTA CORPORATION

# COMING UP

## IN AUGUST

### SPECIAL INTERNET ISSUE

From browser tips to bandwidth blues, next month's *PC World* explores the best ways to live and work online.

**▶BEST OF THE NET: ONLINE STARS**

Lost on the Web? We've got the 100 best Web sites, chat rooms, and newsgroups. From the best place to get tech support at 2 a.m. to the most reliable sites for business advice—it's all here.

**▶EASY INTERNET: BROWSER TIPS**

Blast off with blockbuster tips for the Communicator and Internet Explorer suites, including tricks for finding Web sites, downloading files, and more!

**▶WEB FOR SALE?**

Some online ads could be posing as unbiased info. Here's how to know when you're being sold a bill of goods.

**▶CRUISING AT HIGH SPEEDS**

We examined 56-kbps modems, ISDN, ADSL, cable modems, and satellite and found the best bandwidth options.

**▶ESCAPE FROM E-MAIL HELL**

Drowning in e-mail? We tested six low-cost to no-cost Internet mail clients and found out which ones deliver.

### ALSO NEXT MONTH

**▶The PC World Top 100:** Check out the Top 20 power desktops, budget desktops, and notebooks, and the Top 10 personal printers, 15-inch monitors, graphics boards, and modems.

**▶Here's How:** *Upgrade Guide* advises you on replacing your PC's old battery, *Answer Line* tracks down Fatal Exception errors in Win 95, and *Hardware Tips* helps tune up your memory.

PC WORLD

**Author's response:** You're right. The K6 is pin compatible with the Pentium's Socket 7, but you can't just drop it into an existing Socket 7. BIOS and voltage considerations prohibit that. However, from a manufacturing standpoint, BIOS and voltage are relatively easy to change. This means cheaper systems. By the end of the year, third-party upgrade chips (from Evergreen, for example) that you can just drop into the socket should be available. –Kirk Steers

### NET NANNY UPSET

WHILE WE WERE pleased to see Net Nanny mentioned in "Best Ways to Browse the Web" [April], we feel its inclusion in the "Inter-Not!" section of the story was misleading.

Peter Scisco stated that he did not like the DOS monitoring sessions, indicating he reviewed Net Nanny version 2.0 rather than Net Nanny version 3 for Windows 3.1 and Windows 95, which began shipping in December 1996. Version 3 offers many new features, including a familiar and easy-to-use Windows interface that walks the user through installation and setup procedures.

Scisco also didn't like the fact that he had to type in all the information he did not want his kids to have access to. Net Nanny Software International offers free downloadable "good" and "bad" site lists (which are available at www.netnanny.com) for parents or administrators to import directly into the administration program of Net Nanny. These lists are updated monthly and were also available for users of Net Nanny version 2.0. Net Nanny keeps its filtering lists fully editable. Net Nanny also allows users to monitor all applications residing on the computer, in addition to incoming and outgoing e-mail messages.

*Jessica Maco, PR manager for Net Nanny*

**Author's response:** Version 3 became available after my deadline. Now, having seen the latest version, I agree that the software is much improved. Installation is better, for example. But I still have to type my own lists of words, phrases, URLs, and newsgroups. Granted, you can download lists from www.netnanny.com, but the word list that I downloaded contained egregious spelling ▶


DON'T CAN THEM! SCAN THEM!

THE NEW DIMÂGE SCAN DUAL SAVES YOUR OLD PICTURES FOR NEW LIFE ON YOUR PC.

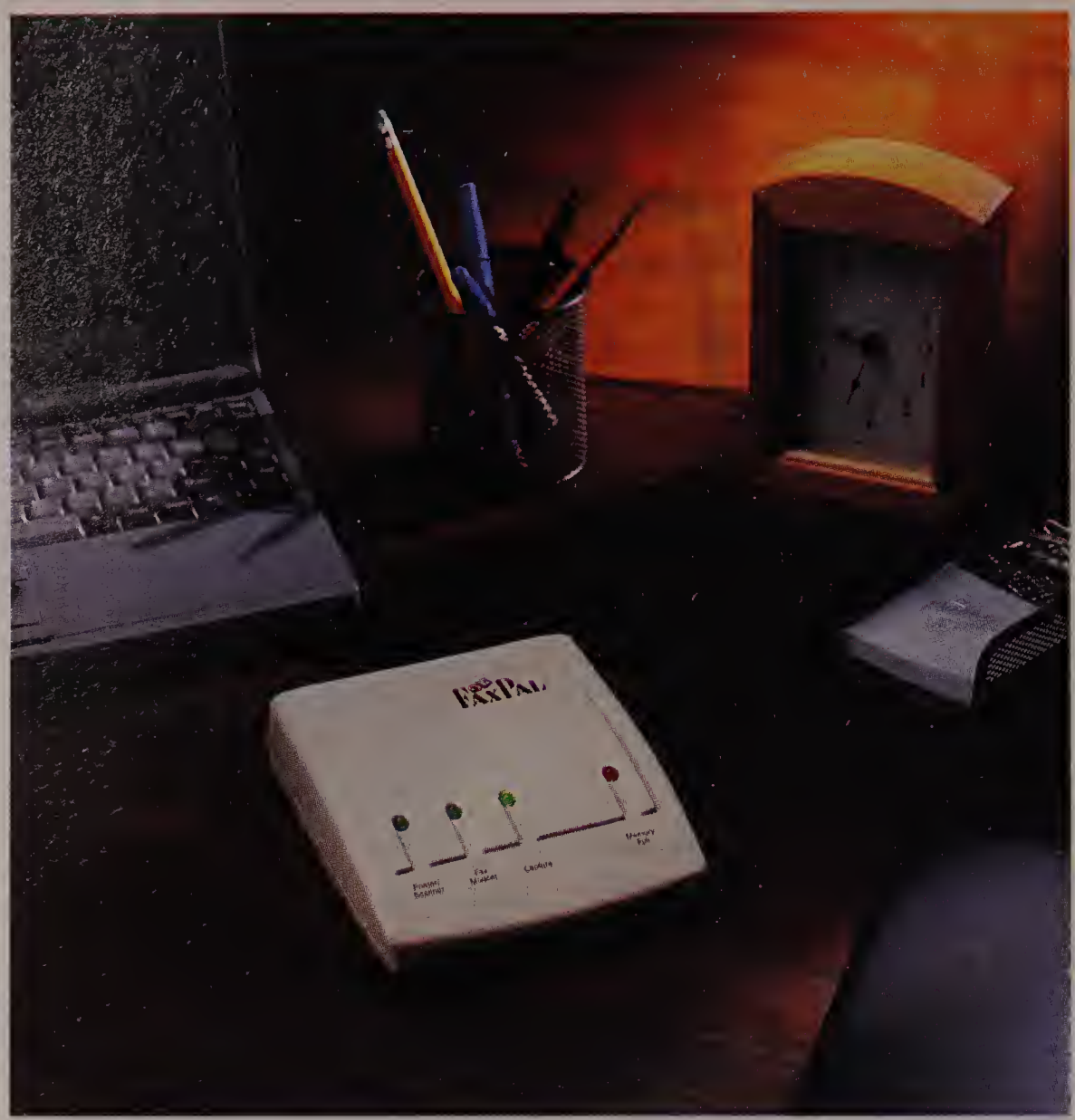
Now clearing out your picture files doesn't mean throwing out. Scan those 35mm or Advanced Photo System* shots on the new Dimâge Scan Dual. After you're finished eyeballing the 8 million pixels resolution, you can e-mail your shots, design with them or use them any way you want on your PC. And all for a price that won't trash your budget.

*Advanced Photo System scanning requires optional adapter.

Dimâge Scan Dual

MINOLTA

©1997 MINOLTA CORPORATION




*3D FaxPal lets you receive faxes by storing them in memory – even while your PC or Macintosh is turned off. Easily connected to your phone line,*

**PC / FAX**

*3D FaxPal shares the line with your phone, listening in for incoming facsimile tones. If a fax tone is detected, 3D FaxPal intercepts the call. If a voice message is detected, 3D FaxPal remains inactive, allowing the user or phone answering machine to take the call. Using flash memory, 3D FaxPal can store up to 20 pages of standard text (upgradeable to 200 pages) until you are ready to retrieve them at your convenience. No need for an internal fax/modem card or even a fax machine.*

**ANSWERING**

*If you use a portable computer, 3D FaxPal is the perfect companion to leave back at the office to receive incoming fax documents. Ideal for small businesses and busy people,*

**MACHINE**

*3D FaxPal is your personal fax server.*

TELEPHONE LINE SHARING
SINGLE PHONE LINE OPERATION

*Call 1-800-966-1140 today to find out more about 3D FaxPal and 3D FaxFile software from InfoImaging Technologies.*

InfoImaging Technologies, Inc.
7026 Koll Center Parkway, Suite 201 • Pleasanton, CA 94566
510-485-4000 tel • 510-485-4100 fax
www.infoimaging.com

3D FaxPal
*Your Personal Fax Server*

**Circle 112 on reader service card**




errors, and the Web site addresses must be manually updated. **–Peter Scisco**

### HARD DISKS AND THE GOOD OL' DOS DAYS

REGARDING Stephen Manes's column "It's Party Time on Your Hard Disk" [May], truer words were never spoken. In the bad old DOS days, it was at least possible for a reasonably intelligent computer user to determine which files were needed to make the operating system and applications run. If I didn't want an application anymore, I just deleted a few files and was done. Now, I'm afraid to delete anything because of the potentially dire consequences.

Installation programs mysteriously scatter files all over the hard drive. Where did they go? Who knows? Want to download the latest plug-in? How big is it and what does it do? Who knows? Has the swimsuit model you looked at in the online catalog been downloaded to the hard drive? You betcha! Thanks, Stephen, I thought I was the only one.

*Steve Litchfield, Jackson, Mississippi*

### SCSI DORK

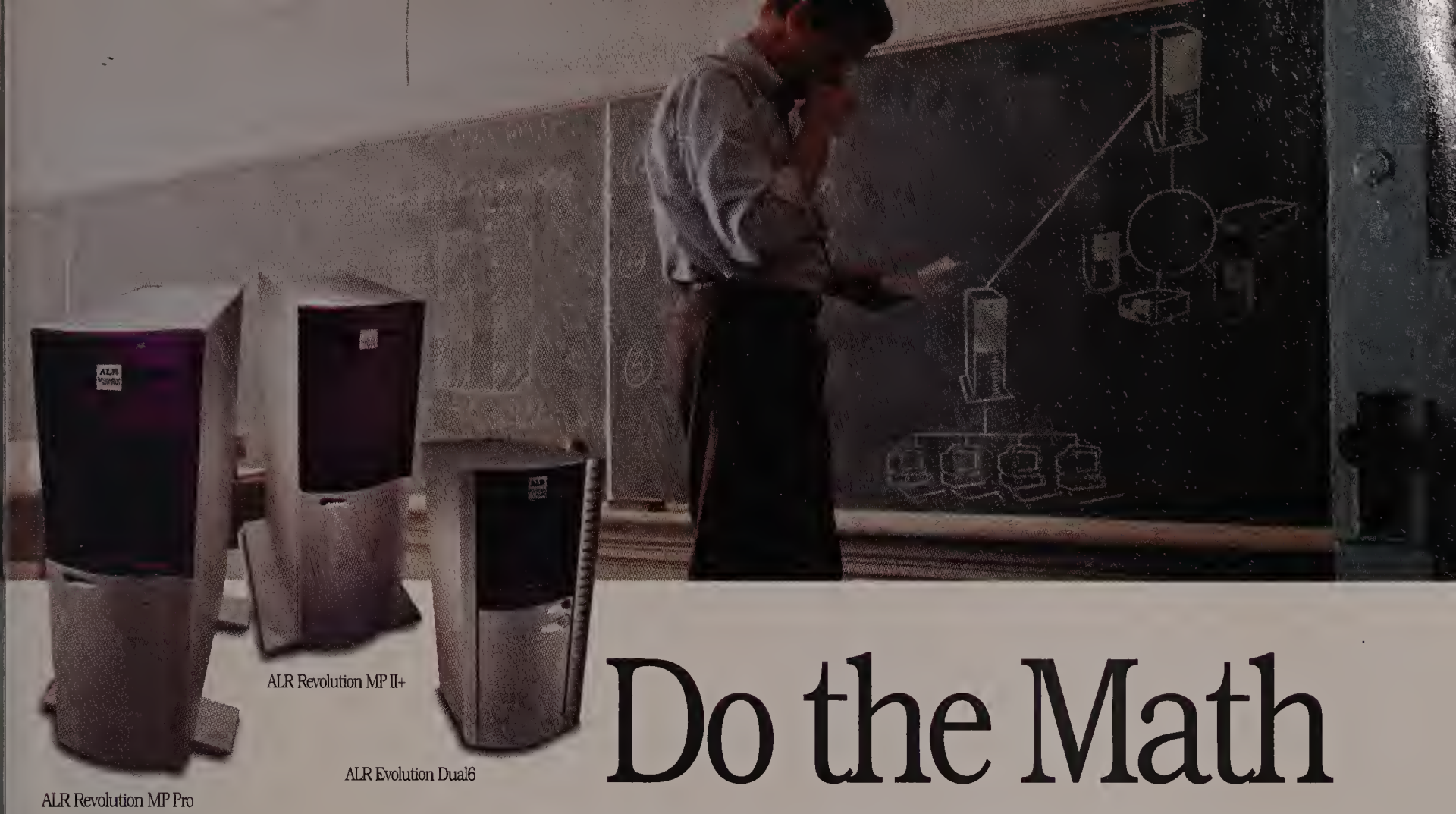
WHILE READING THE May issue, I came across Steve Bass's "SCSI: The Miracle Upgrade Device." I have been a Macintosh user for years and agree fully that SCSI is much better than IDE. But how can he finally figure this out and insinuate that Macintosh users are slow—"Macintosh users have been using SCSI devices for years—how tough can it be?" What a dork!

*Travis Nicholl, Orem, Utah*

PC World *welcomes your responses, ideas, and other letters to the editor.* *See page 14 for contact information.* ■

### CORRECTIONS AND CLARIFICATIONS

"THE NEW Power Players" (*Top of the News*, June) gave an incorrect price for the Sys Technology Performance Pro 266; that machine actually sells for $4369. The article also failed to note that the system uses the Epox motherboard, with a maximum RAM capacity of 1GB, rather than an Intel motherboard. *PC World* regrets the errors.



ALR Revolution MP II+

ALR Evolution Dual6

ALR Revolution MP Pro

# Do the Math

## ALR's Low Cost Server Solutions

| ALR Revolution MP Pro | HP® NetServer™ LH Pro |
|---|---|
| 200-MHz Intel® Pentium® Pro | 200-MHz Intel® Pentium® Pro |
| 32-MB ECC RAM (exp. to 1-GB) | 32-MB ECC RAM (exp. to 1-GB) |
| Eleven Storage Bays | Nine Storage Bays |
| Seven PCI Expansion Slots | Five PCI Expansion Slots |
| 730 Watt **Redundant** Power Supply | 410 Watt Power Supply |
| ALR InforManager™ with Active CPR™ Server Management Software | HP® Navigator™ & ASR Management Software |
| 3 Year On-site Service | 3 Year On-site Service |
| 5 Year/36 Month Warranty | 3 Year Warranty |
| **$3916*** | **$5816*** |

| ALR Evolution Dual6 | Compaq® Proliant™ 800 |
|---|---|
| 200-MHz Intel® Pentium® pro | 200-MHz Intel® Pentium® pro |
| 32-MB ECC RAM (exp. to 1-GB) | 32-MB ECC RAM (exp. to 512-MB) |
| 4.2-GB SCSI Hard Drive | 4.2-GB SCSI Hard Drive |
| Six Storage Bays | Five Storage Bays |
| Seven Expansion Slots | Seven Expansion Slots |
| 315 Watt Power Supply | 240 Watt Power Supply |
| ALR InforManager Server Management Software | Compaq® Insight Manager™, SmartStart, ASR2 |
| 1 Year On-site Service | 3 Year On-site Service |
| 5 Year/36 Month Warranty | |
| **$3872*** | **$4330*** |

| ALR Revolution MP II+ | IBM® PC Server 320 |
|---|---|
| 166-MHz Intel® Pentium®/MMX | 166-MHz Intel® Pentium® |
| 32-KB L1 Cache | 16-KB L1 Cache |
| 32-MB ECC RAM (exp. to 512-MB) | 32-MB ECC RAM (exp. to 256-MB) |
| 2.1-GB SCSI Hard Drive | 2.1-GB SCSI Hard Drive |
| Eleven Storage Bays | Ten Storage Bays |
| Ten Expansion Slots (7 PCI) | Eight Expansion Slots (3 PCI) |
| 300 Watt Power Supply | 300 Watt Power Supply |
| ALR InforManager Server Management Software | IBM® ServerGuard™ |
| 1 Year On-site Service | 3 Year On-site Service |
| 5 Year/36 Month Warranty | |
| **$3796*** | **$5401*** |

*Estimated street price. Based on IDC, 3/10/97.

Value that adds up

These days, you've probably heard a lot of other companies talk about how their servers offer the most bang for the buck or the lowest cost per user. But have you ever noticed that they don't include ALR in those comparisons? Take one look at our entry-level and mid-range servers, and it's easy to see why. Our dual processor-ready powerhouses provide all the performance and features of those competitive servers, for less money. Period.

And at ALR, we don't lock you into one type of model. We offer a wide range of servers, including three that are specifically targeted towards departmental and small business use. Choose between Pentium® or Pentium® Pro technology. Full-size or mid-size tower. Then add just those options that you need. *You* pick the server that best suits your applications and budget.

No matter which of these models you choose, you'll receive the same dedication to flexibility and reliability that have made our high-end Revolution servers international award-winners. We've loaded these systems with features like dual processing support, extensive ECC memory support, excellent expansion, and ALR InforManager™ integrated server management. Pentium Pro chip-based full-size towers even include ALR ActiveCPR,™ our own advanced processor protection and auto-recovery system. Last but not least, we back them with our industry-leading 5 year/36 month warranty.

So the next time another server manufacturer tells you how great their system is, pull out this ad for reference. We're confident that after you hear *their* sales pitch, you'll be calling *our* toll-free number.

1-800-444-4ALR

ALR® Advanced Logic Research, Inc.

5 YEAR 36 MONTHS warranty

http://www.alr.com

## Get Connected!

ISDN Routers are now available for under $650, call 1-888-ALR-ISDN

**ALR is on the Internet -** *CompuServe* - **GO ALRINC.** *& America Online* - **Keyword ALR** Advanced Logic Research, Inc. 9401 Jeronimo, Irvine, CA 92718 (714)581-6770 FAX: (714) 581-9240. Prices, configurations and specifications subject to change without notice. Systems shown with optional equipment. Pricing based on U.S. dollars. ALR is a registered trademark of Advanced Logic Research, Inc. Pentium logo and Intel Inside logos are trademarks of Intel Corporation. All other brand and product names are trademarks or registered trademarks of their respective owners. © 1997 by ALR

**Circle 9 on reader service card**

Don't buy these three letters,

# MMX

© 1997 Advanced Micro Devices, Inc. AMD, the AMD logo, AMD-K6, and the K6 logo are trademarks of Advanced Micro Devices, Inc. Microsoft Windows is a registered trademark of the Microsoft Corporat
All other names may be trademarks of their respective holders.

Are all MMX chips created equal? Hardly. The AMD-K6™ MMX processor is clearly superior. Versus any Pentium, the K6 chip s faster. It's smaller, packing the power of 8.8 million ransistors onto the smallest 6th-generation die. It runs cooler. It's easier to use because it's Socket 7 compatible. And it costs less. As an MMX processor, it delivers a new generation of multimedia performance. In short, the AMD-K6 MMX processor is the most awesome engine ever built for running Microsoft Windows®-based PCs. Use one and it will leave you with this three-letter reaction: Wow. See for yourself and visit our website for the latest performance benchmarks or call 1-800-222-9323.

AMD

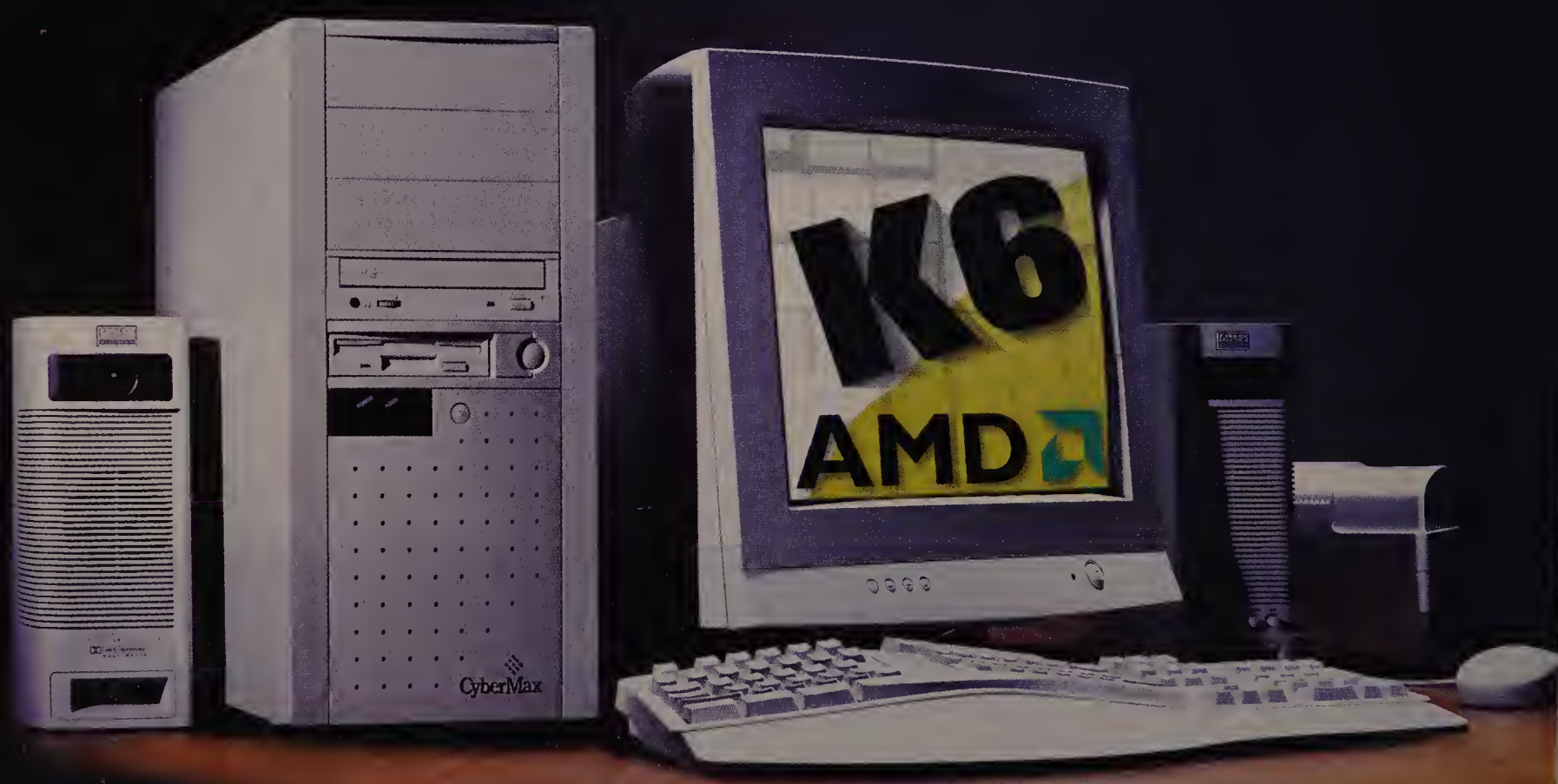
www.amd.com

# AMD

without these three letters.

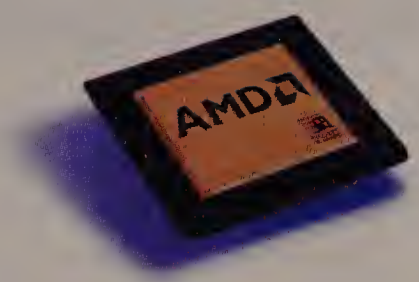
Circle 16 on reader service card

# The performance is about to begin




CyberMax accepts Visa, MasterCard, Discover, American Express, prepaid checks and electronic wire transfers. Purchase orders from government agencies, universities, and Fortune 500 companies can also be accepted. All returned items must have an RMA number and must be in original packaging. The cost of returned freight is not included with any money back guarantee; shipping charges are not refundable. Prices and product descriptions are subject to change without notice. Microsoft, and Windows 95 are registered trademarks of Microsoft Corporation. MMX is a registered trademark of Intel corporation. AMD and K6 are registered trademarks of Advanced Micro Devices. All other trademarks are trade names of their respective companies. * Source: AMD Winstone 97 testing. **On-site service may not be available in certain remote areas, and is available only if determined to be necessary by our technicians; GE 4 year warranty is optional. Products may differ from image shown. Leasing terms: 36 month/10% FMV option, taxes and shipping additional. †Based on identically configured systems except CPU and motherboard (Pentium Pro systems only) using Winstone 97 tests.

# Starring the AMD-K6™ Processor with MMX™ Technology




CyberMax's new PowerMax series is driven by the AMD-K6™ Processor, a CPU that's already staking a claim as the fastest Windows performer to date.*

## PowerMax A4 233MMX

DO668 — $ 2499

Basic Model Specs-see below — Business Lease.... $87

- AMD-K6™ PR2-233 Processor w/ MMX™ Technology
- 64MB SDRAM Memory
- Matrox MGA Millennium Video Card w/4MB WRAM
- 6.0GB Hard Drive
- 16x Max CD-ROM, Ensoniq Wavetable Sound Card
- K56flex™ Protocol Fax/Modem w/Voice Mail & Spkrphone
- 17" (15.8"VA) 1280x1024 Color Monitor
- Altec Lansing ACS400 Speakers & ACS250 Subwoofer
- Corel WordPerfect Suite 7 w/Max's Software Toolbox

K6-PR2-200.....$2349
Add 3.2GB Tape Backup..... $189

## PowerMax A3 200MMX

DO667 — $ 2149

Basic Model Specs-see below — Business Lease.... $75

- AMD-K6™ PR2-200 Processor w/ MMX™ Technology
- 32MB EDO RAM Memory
- STB Velocity 3D Card w/4MB VRAM
- 4.0GB Hard Drive
- 16x Max CD-ROM, Ensoniq Wavetable Sound Card
- 33.6Kbps Fax/Modem w/Voice Mail & Spkerphone
- 17" (15.8"VA) 1280x1024 Color Monitor
- Altec Lansing ACS90 Speakers & ACS250 Subwoofer
- Corel WordPerfect Suite 7 w/Max's Software Toolbox

K6-PR2-233.....$2299
Upgrade to ACS400 Speakers.....$79

## PowerMax A2 200MMX

DO666 — $ 1999

Basic Model Specs-see below — Business Lease.... $70

- AMD-K6™ PR2-200 Processor w/ MMX™ Technology
- 32MB EDO RAM Memory
- STB Nitro 3D Video Card w/4MB EDO DRAM
- 3.2GB Hard Drive
- 16x Max CD-ROM, Ensoniq Wavetable Sound Card
- 33.6Kbps Fax/Modem w/Voice Mail & Spkerphone
- 17" (15.8"VA) 1280x1024 Color Monitor
- Altec Lansing ACS45 Speakers
- Corel WordPerfect Suite 7 w/Max's Software Toolbox

K6-PR2-233.....$2149
Upgrade to MS Natural Keyboard.....$49

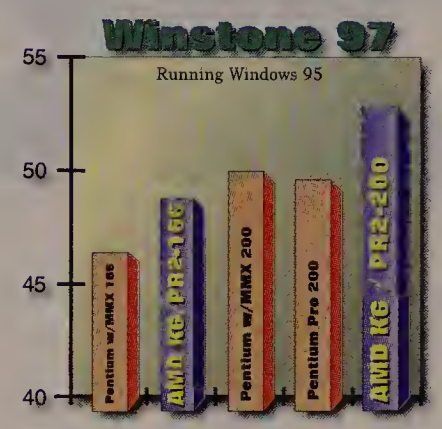
## Max A1 166MMX

DO665 — $ 1499

Basic Model Specs-see below — Business Lease.... $52

- AMD-K6™ PR2-166 Processor w/ MMX™ Technology
- 16MB EDO RAM Memory
- 128-bit Graphics w/4MB MDRAM & ET6000 contr.
- 3.2GB Hard Drive
- 12x CD-ROM, Ensoniq Wavetable Sound Card
- 33.6Kbps Fax/Modem w/Voice Mail & Spkerphone
- 15" (13.8"VA) 1024x768 Color Monitor
- Altec Lansing ACS90 Speakers
- Corel WordPerfect Suite 7 w/Max's Software Toolbox

K6-PR2-200.....$1599
Upgrade to 4.0GB HDD..... $69




*The AMD-K6™ Processor outperformed Pentium® and Pentium® Pro Processors in recent Winstone® 97 testing*

## Max's Software Toolbox

**Organization**
*Corel WordPerfect Suite 7, Resume Designer*

**Finance**
*Quicken Financial Manager (Special Edition), Multimedia MBA*

**Reference**
*Compton's Reference Collection*

**Education**
*Compton's Interactive Encyclopedia*

**Communication**
*CyberSpace Pack (trial memberships to AOL, Prodigy, CompuServe, Netcruiser, plus Epoch)*

24 Hour Tech Support

**Basic Model Specs:** • Mini Tower Case w/2 Fans • 512K Pipeline Burst Cache • 1.44MB 3.5" FDD • MS Windows® 95 w/MS Plus • 104-Key Keyboard • Microphone • Microsoft PS/2 Mouse • Limited 3-Year Warranty • 30 Day Money Back Guarantee • Telephone Technical Support • 1-yr. In-Home Service** • 10 Minute Quick Setup Guide

CyberMax Computer, Inc.

ALTEC LANSING — ENSONIQ — matrox — TOSHIBA

**1-800-437-4596**

Circle 74 on reader service card

# ake Roo

Disk space a problem? Too many disk drives? Here's the solution. Make Room. 120MB of room. Introducing SuperDisk™ and the LS-120 drive. Unlike the Zip™ drive, the LS-120 drive is compatible with standard 3.5" disks. So you only need one drive. In other words, don't buy a PC without it. To learn more about the SuperDisk™ diskette and other LS-120 solutions for notebook, desktop, and add-on drives, call 1·800·888·1889, ext. 4050 or visit www.imation.com.

IMATION
Borne of 3M Innovation

# Online Travel: Time vs. Money

*Travel Web sites offer 24-hour convenience, but that often comes at a higher price.*

ILLUSTRATION: GORDON STUDER

BEFORE I QUIT THE corporate life, traveling for business was easy. I'd just call Michael in the travel department, tell him where I was going and when I needed to be there, and the tickets would turn up a few days later via interoffice mail. Now, when I travel for work—or for fun—I'm on my own.

My first few business trips as a self-employed person were simple: one city each trip, no need for a car. Two calls—one to United to cash in my frequent flyer miles and book my flight, another to reserve a hotel room—and the trip was booked. But with three excursions scheduled in the next few months (a graduation in Idaho, a wedding in Portland, Oregon, and a business conference in Atlanta, with a side trip to Charleston, South Carolina), I figured it was time to seek professional help.

I needed a way to track down rates and flight times and come up with the best options to fit my schedule and my budget—without spending all day at the task.

I've heard the hype about the great travel services available on the Web. I've even subscribed to American Airlines' NetSaver service, a weekly electronic mailing list that promotes discounted prices on select American routes. (You can subscribe on its Web site, www.americanair.com.) I've never been able to take advantage of the cheap fares, since they're available only for certain cities, but I continue to check it religiously just the same. You never know; I might someday need a quick getaway to Dallas–Fort Worth.

But is cyberbooking easier or cheaper than using a travel agent? I decided to find out. I chose two popular Web-based travel services: Expedia (www.expedia.com) and Travelocity (www.travelocity.com). Then I called my AAA travel agent, whose no-frills service has served me well in the past.

The most appealing aspect of online trip planning is that the sites are always open (a big plus for me, since I tend to get most things done during unconventional hours). So instead of having to make all my arrangements between 9 and 5, I can wait until the kids are in bed and *Chicago Hope* is over.

## AND THE HUNT BEGINS

I STARTED WITH Expedia, a travel service by Microsoft that you can use to research and book flights, hotel rooms, and car rentals. Before I could get down to business, I had to register. That took about 10 minutes.

Expedia's fill-in-the-blanks interface is fairly straightforward. With the Flight Wizard, for example, I simply told it how many people were traveling, arrival and departure dates and cities, and specific search criteria (particular airlines, direct flights only, cheapest fare, and so on). Here's where I ran into my first hassle: We were traveling to a small town in Idaho and I had no idea whether Twin Falls, Idaho, or Salt Lake City would be closer.

A travel agent could have told me, but not Expedia, so I guessed and typed 'Salt Lake City'. In less than a minute, Expedia came up ▶

# PKZIP® for Windows

*Version 2.50*
*Compatible with*
*♦Windows 95*
*♦Windows NT*
*♦Windows 3.1x*

**Why use PKZIP for Windows?**

- Save on-line time charges and save disk space.
- Compress files an average of 50-70%. Many large files compress well over 90%.
- Open .ZIP archives downloaded from the Internet.
- Simple point-and-click interface.
- Combines the best and fastest patented compression technology found in PKZIP 2.04g.

**Other PKWARE Products:**
***PKLITE® & PKLITE Professional® for Windows***
Put your executables on a diet!

***PKWARE Data Compression Library®***
Put compression in your application.
Separate versions available for DOS, DOS32, Windows, Win32, OS/2, UNIX & Macintosh.

**To order call 414-354-8699 or visit our web site http://www.pkware.com**

*1992-1996 PC World World Class Award*
*1996 Government Computer News Best New Product Award at FOSE Finalist*
*1995 Computer Currents Readers Choice Award*
*1993 Shareware Industry Award*
*1992 Premiere Computing Magazine Award*
*1992 Dvorak/Zoom Award*

**PKWARE, Inc.**
**9025 N. Deerwood Drive**
**Brown Deer WI, 53223 USA**
**FAX: 414-354-8559**
**Email: info@pkware.com**

Copyright 1996 PKWARE, Inc. All Rights Reserved. All trademarks or registered trademarks are the property of their resepective owners. PCW-797

**Circle 212 on reader service card**




with two flights from Oakland that met my criteria. Both were on Delta, both with a total round-trip fare of $560 for four. Since I knew that Southwest Airlines flies that route and often offers discounted companion fares, I went back a screen to change my search criteria and take a look at Southwest-only options. No such luck. It turns out Expedia doesn't handle Southwest flights. And, as I later learned, even some travel agents don't have electronic access to Southwest reservations.

Since I had no choice, I added one of the Delta flights to my itinerary and moved on to the Rental Car Wizard. No shortage of options here—11 models, ranging from $34 to $56 per day. Cheap was the order of the day, so I added the $34 car to my itinerary. Total time for fare hunting and booking: 35 minutes.

On to Travelocity, based on the powerful Sabre travel reservation system operated by American Airlines and used by travel agents. The interface is a little more cumbersome than Expedia's. For example, when entering information for departures and arrivals, I had to provide a city and state (you can't just type 'Salt Lake City', for example) or, for quicker results, a three-letter airport code. Some codes are obvious, but not all of them, which means I ended up jumping over to the identify-the-destination screen pretty frequently to fill in all the blanks on the entry screen.

### JUST THE INFO YOU WANT

ON THE PLUS SIDE, I had more options for customizing the information I wanted. For instance, instead of Expedia's requirement that I select just one airline, Travelocity let me choose four, in order of preference (or, as with Expedia, have it search its database for all available airlines). I could also prioritize preferences by prices, flight times, and airline. My favorite feature, though, is the speedy airport locator. Just type in your destination city and state, and up pops a list of airports and the distance of each from your ultimate destination. Neat.

Like Expedia, Travelocity came up with the two $560 Delta flights. It also offered a third option, though: a $560 fare for four on Southwest (so much for those cheap companion fares). The car rates were also about the same, ranging from $36 to $60 per day. Total time spent with Travelocity: 25 minutes.

I needed a hotel room in Atlanta and found Travelocity's selection to be much more extensive than Expedia's. Among the lengthy list of choices was a hotel recommended by the conference I would be attending, so I checked availability and booked a room there. I was hoping to stay in a small inn while in Charleston, but Expedia didn't offer information on bed-and-breakfasts. While Travelocity offered many hotel/motel choices, including bed-and-breakfasts, Expedia accessed only one: the pricey Charleston Place Hotel, with rooms starting at more than $225 per night.

Too late for this trip, I discovered the Ultimate Bed and Breakfast Directory at www.touristguide.com/b&b. It lists and illustrates bed-and-breakfast inns all over the United States (with links to directories in other countries) and includes detailed descriptions and prices, even photos. When I added Charleston, South Carolina, to the search criteria, it came up with 43 bed-and-breakfasts for me to choose from.

With printouts of all my online options in hand, I logged off and called my AAA travel agent to see what she had to offer. She came up with the same flight information as Travelocity and Expedia, with one important exception: Some of the fares were lower. Instead of $560 for ▶

**BEFORE YOU GO**

**ONLINE TRAVEL PLANNING TIPS**

- Don't assume the online rates are the cheapest. Call a travel agent, too.
- Check several sites—the selection varies considerably from one travel service to the next.
- Read the fine print. Quoted rates usually don't include taxes and surcharges.
- Confirm your online reservations with the airlines, hotels, and rental car companies. This lessens the chance of booking errors or miscommunications.
- If you travel on a particular airline regularly, it's worth checking its Web site for direct bookings, frequent flyer bonuses, and personal seat-selection maps.

# Vivid Imagination

Once again, Acer sets higher standards in performance, quality and value with the introduction of a new family of AcerView™ monitors designed to maximize your viewing experience. ***Revolutionary Mini-Neck CRT Tubes*** in selected models offer ***Power Consumption Reductions Up to 46-Percent***, while Intelligent iScreen®* design makes customizing your favorite settings a snap. ***With Sizes Up to 17" (15.7" viewable)***, ***Optional Attached Speakers*** and ***Dot Pitch Ranges from .28 to .25***, AcerView has the perfect flicker-free model just for you. Backed by Acer's 3-year limited warranty and outstanding reputation for reliability, they're all ***Windows® 95 Plug'n Play Compatible.*** Call ***1-800-379-2237, Ext. 124*** today for the dealer nearest you to see the new monitors from AcerView that display images so vividly, you'll question reality.

Acer®
Acer Components

## AcerView™ Quality Monitors

©Copyright 1997 Acer Components, a division of Acer America Corporation. All rights reserved. *iScreen not available with 35c or 55c models.
The Acer Components logo and AcerView are trademarks and iScreen is a registered trademark of Acer America Corporation and Acer Inc. Windows is a registered trademark of Microsoft Corporation. All other trademarks are the property of their respective owners. Vivid.PCW.7/97.124

# Put the Power of our Partnership to Work for You.

We at ProGen Systems have built our success on what we call the partnership of performance and price. It's a way of doing business that works for us. And it works for you, too. ■ That's because we build-in the latest industry advances, including genuine Intel® Pentium® II Processors, 3D MPEG video graphic accellera-tion and the new 16X CD-ROM drives, and offer them to you at highly competitive prices. ■ So call a ProGen consultant today, or visit our on-line order web site at www.progen.com, and put ProGen to work for you.

## Discover MPEG II — PC World Top 20

- Intel® PCIset Based Systemboard
- 512K Pipeline Burst Cache
- Intel® Pentium® Processor
- 16 MB EDO RAM
- ProGen GOLD VGA 2 MB EDO MPEG, Cinepak
- WavePlayer 32PnP 3D sound card
- 33.6kbps FAX/Modem w/Voicemail, upgradable to 56kbps
- Intuit Quicken Financial Software/PC 411 National Phone Directory/Official WWW Yellow Pages/ United Connections Travel Software
- 12X EIDE CD-ROM Drive
- 1.44 MB FDD, Win 95 KB, Microsoft Mouse
- MS Windows® 95 CD & Manual
- Amplified Stereo Speakers
- CD Software Bonus Pak & Microphone
- ProGen ProCare Warranty

| | |
|---|---|
| ▸ 1.6GB EIDE HardDrive<br>▸ 14" (13.2" v.i.s.) .28 dp PnP monitor | 133MHz $1149 |
| ▸ 2.5GB EIDE HardDrive<br>▸ 15" (13.8" v.i.s.) .28 dp Digital PnP monitor w/OSD | 166MHz $1329 |

## Polaris — Multimedia Platform for the Future

- Intel® PD440FX Systemboard
- 512K Pipeline Burst Cache
- Intel® Pentium II Processor
- 32 MB ECC EDO RAM
- 4GB EIDE Hard Drive
- ProGen GOLD 3D (S3 Virge) 4MB EDO DRAM, MPEG
- 3D Stereo Wavetable Audio Subsystem
- 33.6kbps FAX/Modem w/Voicemail & Speakerphone
- 16X EIDE CD-ROM Drive
- 1.44 FDD/Microsoft Mouse/Win95 Keyboard
- Universal Serial Bus Interface (2)
- Windows® 95 CD & Manual
- Subwoofer Sound System w/Amplified Stereo Speakers
- Super CD Bonus Pak w/Extra Games & Microphone
- PC Magazine Editor's Choice! Panasonic S17 .27dp 17" Digital PnP Monitor
- ProGen ProCare Warranty

| | |
|---|---|
| 233MHz | $2849 |
| 266MHz | $3049 |

## Discover 3D — Pentium® Processor with MMX™ technology-based PCs

- Intel® PCIset Based Systemboard
- 512K Pipeline Burst Cache
- Intel® Pentium® Processor w/MMX™ technology
- ProGen GOLD 3D (S3 Virge) 4 MB EDO DRAM MPEG
- 3D Stereo Wavetable Audio Subsystem
- Subwoofer sound system w/Amplified Stereo Speakers
- 33.6kbps FAX/Modem w/Voicemail upgradable to 56kbps
- Intuit Quicken Financial Software/PC 411 National Phone Directory/Official WWW Yellow Pages/ United Connections Travel Software
- 16X EIDE CD-ROM Drive
- 1.44 MB FDD, Win 95 KB, Microsoft Mouse
- MS Windows 95 CD & Manual
- Super CD Bonus Pak w/ Extra Games and Microphone
- Panasonic 15" (14.0" v.i.s.) .27 dp Digital monitor
- ProGen ProCare Warranty

| | |
|---|---|
| 166MHz<br>▸ 16MB EDO RAM/2.5GB EIDE HDD | $1499 |
| 200MHz<br>▸ 32MB EDO RAM/3.1GB EIDE HDD | $1809 |
| 233MHz<br>▸ 32MB EDO RAM/3.8GB EIDE HDD | $1979 |

ProGen™ SYSTEMS
A division of ProGen™ Technology Inc.

Works for You.
www.progen.com

# 1-888-776-9595

Technical Support: 1-888-777-5501 Customer Service: 1-800-848-8767

Sales Hours: M-F, 6:30 A.M. - 7:00 P.M. PST, Sat., 9:00 A.M. - 3:00 P.M. PST
Customer Service/Technical Support Hours: M-F, 8:00 A.M. - 5:00 P.M. PST

MMX™ intel inside pentium® PROCESSOR

ProGen™ Technology, Inc. 15501 Redhill Avenue, Tustin, CA 92780 Ph: 714/566-9200 Fax: 714/566-9267 BBS: 714/566-9255 E-Mail: webmaster@progen.com.

©1997 ProGen™ Technology, Inc. Intel Inside logo and Pentium are registered trademarks and Pentium Pro, Pentium II and MMX are trademarks of Intel Corporation. All other trademarks are the property of their respective owners. Prices are subject to change without notice. * On site service is based on the discretion of ProGen technical support. 30-day money-back Guarantee (shipping cost not included) Actual products may be different from products in photo.

**Circle 184 on reader service card**

the round-trip tickets to Salt Lake City, she got me companion-fare tickets (I *knew* they were available somewhere) on the same Delta flight for a total of $484—or $76 less than the online services offered. The Portland trip netted a similar savings: $440 for four tickets on Alaska Airlines, instead of the $512 quoted by both Expedia and Travelocity for the same flight on Alaska. Savings so far: nearly $150.

Now I was eager to move on to the final trip. Who knows, maybe I'd save enough to stay in Charleston an extra night. No such luck, though. The travel agent quoted me the same fares on the same flights as both online services: $1100 for two round-trip tickets on Delta. And, oddly enough, the car rental rates quoted by the travel agent were a few dollars *more* than those offered by either Expedia or Travelocity. Total time spent booking with the travel agent: 15 minutes.

### IS CONVENIENCE WORTH IT?

YES, THE ONLINE travel services are convenient. I can book flights, rooms, and cars at 3 a.m. or 3 p.m.—whenever the mood strikes me. Sometimes, as with the rental cars, they even proffer the best deals around. But not always. Had I booked flights on either Expedia or Travelocity, I would have paid close to $150 more than necessary. That's a substantial chunk of change. Plus, as smart as these services are, you can't ask them questions the way you can a travel agent, or get the promotional or membership discounts to which you may be entitled.

So what will I do for my next trip? Probably the same thing I did this time. I'll check online, call a travel agent, and then book with whoever has the best prices. It's not as convenient as calling Michael in the company travel office, but this is my money, so the savings are definitely worth the extra research time.

*Send an e-mail about this topic or any consumer concern to consumerwatch@pcworld.com. Roberta Furger is a* PC World *contributing editor. Her book on girls and computing,* Does Jane Compute? *will be published by Warner Books in December.* ■

# Serious Business

We're serious. Serious about changing the view at your desktop. Serious about suggesting you consider our 15" *(13.7" viewable image size)* AcerView 56e when making your next monitor purchase.

With the 56e, you'll add the luster of brilliant colors to your business graphics or multimedia presentations and the sharpness of a razor's edge to your on-screen text. Its flat, square screen design with overscanning maximizes your workable screen space. Plus with a dot pitch of .28mm, you'll see your way clearly through every moment of your business day.

The 56e also gives you the security of a 3-year limited warranty, backed by the strength and reputation of Acer, the number-one PC supplier in North America and Canada and the world's second largest manufacturer of quality monitors.

So, if you're serious about improving the view from your desktop, call **1-800-379-2237, Ext. 124** for the AcerView dealer nearest you.

ACER®
Acer Components

AcerView™ Quality Monitors

©Copyright 1997 Acer Components, a division of Acer America Corporation. All rights reserved. The Acer Components logo and AcerView are trademarks of Acer America Corporation and Acer Inc. All other trademarks are the property of their respective owners. • AVCorp.PCW.4/97-124

# Superior perfo for *business*

## Introducing *Matrox Mystique® 220 Business* graphics accelerator

The new *Matrox Mystique 220 Business* graphics accelerator provides a high performance, all-in-one solution for demanding business applications. Featuring a new, high-speed 220 MHz RAMDAC and fast SGRAM memory, *Mystique 220 Business* delivers benchmark-winning speed and refresh rates with exceptional display quality. Its state-of-the-art design integrates acceleration for 2D, 3D and video, so you'll be ready for today's and tomorrow's Windows® NT and 95 applications. What's more, Matrox protects your investment by building an affordable memory and video upgrade path into every product. Add up to 8 MB of SGRAM power or the Matrox Rainbow Runner Studio for video editing, video conferencing, MPEG computer based training, and much more.

With over 20 years of experience and 200 international awards of excellence, Matrox is the company you can rely on. Choose the leader in acceleration. Choose Matrox.

**matrox**

**1-800 362-9352 http://www.matrox.com/mga**

Estimated street price. All performance tests conducted by Matrox Graphics Inc. on a Gateway 200 MHz MMX with 32 MB of RAM and 512K cache. Matrox Mystique 220 Business, ATI 3D ProTurbo + PC2TV, STB Nitro 3D and Diamond Stealth3D 2000XL were configured with maximum memory configurations using driver releases 3.41, 3.03, 1.50K and 4.03.00.3105 respectively. Winbench 97 business tests conducted at 1024 x 768 @16-bit at 75 Hz using small fonts under Windows 95. 3D Winbench 97 tests conducted at default resolution of 640x480 @16-bit at 75 Hz with DirectX ™ 3a using small fonts under Windows 95. 3D WinBench settings were dictated by Quality Suite responses for the respective products.

# rmance

# computing

NEW

### Mystique 220 Business

- Fast 2D Windows, 3D business graphics and video presentations
- Includes 6 free software titles. $500 value.

### Five pack bulk version

- Includes five boards, one manual, five sets of drivers, and five software bundles.

### Matrox Rainbow Runner Studio

- Ideal for video editing, video conferencing, PC to TV output, 'PC-VCR' video capture, and hardware MPEG video
- Includes 4 free software titles. $500 value.

*Matrox outperforms the competition (16-bit)*

*Includes six free software titles*

Picture Publisher 7 · Simply 3D 1 · Serif PagePlus 4.0 · CompCore SoftMPG · Netscape Navigator · VREAM VRML

Circle 143 on reader service card

Come See Us At
PC Expo Booth #4362

| | 78D | 78i | 7D | 76i | 74i |
|---|---|---|---|---|---|
| CRT Size/Viewable Size (17"/15.7") | • | • | • | • | • |
| Max Resolution (NI) | 1600 x 1280 | 1600 x 1280 | 1280 x 1024 | 1280 x 1024 | 1024 x 768 |
| Dot Pitch/ Aperture Grill | .25AG | .26DP | .28DP | .28DP | .39DP |
| Digital Controls | • | • | • | • | • |
| On Screen Programming | • | • | • | • | |
| Color Controls | • | • | • | • | |
| Stereo Speakers/ Microphone | | | • | | |

**Circle 96 on reader service card**

GoldStar
LG Electronics

# See The Big Picture

Open your eyes wide to the brilliant 17" (15.7" VIS) GoldStar monitors from LG Electronics. With resolution up to a razor-sharp 1600 x 1280, vertical refresh up to 85 KHz and advanced features such as digital controls and on-screen menus, there is a GoldStar monitor for everything from general business applications, to graphics and DTP to CAD/CAM. What's more, GoldStar monitors deliver this big performance at a price much less than...well, you get the picture.

For more information on the new GoldStar monitors, including the incredible new Studioworks 78D with Diamondtron™ CRT, call 800-243-0000 or visit our web site at www.lgeus.com.

PARTS • LABOR • CRT 3 YEAR LIMITED WARRANTY

AMcom 800-355-0110 • ComputerMax 407 834 7000
D&H 800-340 1001 • DSS 888 DSS HDSS (377 1377)
Gates/Arrow 800-332 2222 • GBC/Globelle 800 745 7
Ingram Micro 800 456-8000 • Luski 800 454 8754
Pantex 713 988-1688 • Seneca Data 800 227 3432
Tech Data 800-237-8931

Diamondtron is a trademark of Mitsubishi Electronics America.

# Seagate's packaging deceptive? ◆ Raw deal on used Gateway ◆ Best Buy blues

## I'VE BEEN DECEIVED

I BOUGHT A Seagate Tape-Stor 800, and on the box it says "Free Backup Exec Software Upgrade for Windows 95! Now Included." But inside I found 16-bit software called Seagate Backup for DOS/Windows and a flyer offering Backup Exec for Windows 95 for $49.95. This is false advertising.

*Peter Villanyi*
*Spring Hill, Florida*

**Editor's response:** Seagate's corporate communications director, Woody Monroy, explained that the program highlighted on the Tape-Stor 800 box and the software inside were actually the same product. "The original Backup Exec was renamed Seagate Backup following Seagate's merger with Conner Peripherals in February 1996," reports Monroy. "The product shipped with the renamed software, but we didn't make the name discrepancy clear on the box."

The flyer in the box was there to let customers know that a 32-bit version, costing $49.95, was also available. This program was a stand-alone product, not an upgrade. Seagate apologized to Villanyi and sent him the 32-bit software, plus three Travan tapes, all free of charge. (A new version costing $99 retail is now available.) Villanyi reports he is very happy with the resolution.

## SECOND OWNER LOSES OUT?

I PURCHASED A USED Gateway 2000 Solo laptop in January 1997, and I'm very happy with it. However, I was recently shopping in the store where I bought it, and overheard the manager talking on the phone to Gateway. I learned that the manager was trying to buy parts, but Gateway was refusing to sell them because the store wanted the parts for used computers. Does this mean that if my laptop breaks I won't be able to get it repaired because of Gateway's refusal to supply parts?

*Marc D'Ambrosio, Internet*

**Editor's response:** A Gateway spokesperson confirmed that the company's standard warranty policy supports only the original purchaser. "Ownership is not fully transferable to a secondhand buyer," the spokesperson said. The reason? Gateway's policy is designed to protect the original owner in case the PC is stolen, for instance. Also, transferring historical data about each system from the file of one owner to another is no simple task. Gateway attempts to maintain an inventory of parts unique to older systems, but it cannot do so with every single part. That doesn't mean D'Ambrosio won't be able to get his computer fixed, though: He can use generic parts for most repairs. At press time Gateway reported it is evaluating new programs like transferable warranty plans for portables. No details were yet available.

Before you buy a used PC, be sure to check what coverage you're entitled to.

## NO SERVICE, NO COST?

MY WIFE HAD problems with the power button on her Acer system, so we brought it back to Best Buy for repair. The technician found nothing wrong; he guessed that the jostling during the drive to Best Buy had fixed the power button. They still insisted on charging $47.95. When I got the PC home, it worked fine. But that charge isn't justified because Best Buy didn't fix it.

*Richard Manlove, Wheaton, Illinois*

**Editor's response:** Pete Cermak of Best Buy consumer relations apologized to Manlove and explained that even though Best Buy didn't repair the system, a technician spent a substantial amount of time performing tests. "The $47.95 is a reflection of the amount of time required for the diagnostic check," he says. Manlove received a $50 gift certificate from Best Buy but still wasn't happy. Our advice? Read the fine print carefully when you authorize service at any repair center.

## RAPID REPAIRS

I BOUGHT A Texas Instruments Extensa 575CD laptop with 8MB of RAM in December 1996. Six weeks later I tried to upgrade to 16MB and got different error messages every time I booted the PC. After replacing the memory three times and trying all sorts of troubleshooting methods without success, I finally called tech support. TI picked up my system via FedEx, and seven days later I got my laptop back fully repaired, all under warranty. I am truly impressed. TI has a customer for life!

*Nelson L. Goodwin*
*Fort Washington, Maryland*

*Think you've gotten a raw deal—or a great one?* PCW Advocate *wants to hear the details at advocate@pcworld.com. We'll investigate complaints and publish items of the broadest interest. Aoife McEvoy is a staff editor for* PC World. ■

## THE FINE PRINT

### "LIMITED" SOFTWARE SUPPORT: SO, WHAT'S THE DEAL?

HOW IS SOFTWARE support handled on a new PC? The policies vary from company to company. This support documentation for NEC's Ready series, for instance, includes information on "limited" telephone support. What's the scoop?

1. Software that is preinstalled on Ready machines comes with free phone support for 90 days at a toll-free number, 24 hours a day, seven days a week. How is it limited? NEC will attempt to answer all software-related issues, but only up to a point. If your questions are very in-depth or technical, you'll probably be referred to the software manufacturer.

2. If you know you're going to ask for software support, check to make sure how long the time frame is—and when it starts. NEC's policy states that the 90-day period begins when you first get phone help from a technician during your standard one-year warranty.

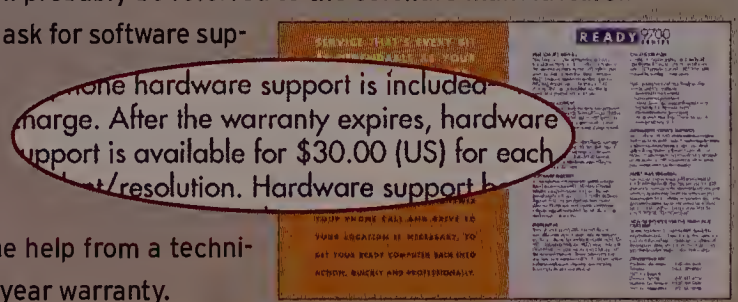



ILLUSTRATION: GARY BASEMAN

# THE NEW DELL 266MHz
# THE COMPETITION WILL BE

# SYSTEM IS SO FAST, DEMANDING A DRUG TEST.

### *NEW* DELL DIMENSION XPS H266
266MHz PENTIUM II PROCESSOR

- Mini Tower Model
- ★ **32MB EDO Memory**
- 512KB Integrated L2 Cache
- ★ ***NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)**
- 1000HS Trinitron® Monitor (15.9" v.i.s., .26dp)
- Matrox Millennium 4MB WRAM Video Card
- ★ ***NEW* 24X Variable EIDE CD-ROM Drive**
- Yamaha 32 Wave Table Sound
- Altec ACS-290 Speakers with Subwoofer
- 56K Capable* U.S. Robotics x2 Telephony Modem
- Iomega Zip 100MB IDE Internal Drive with One Cartridge
- ★ **MS® Office 97 Small Business Edition plus Bookshelf**
- MS Windows® 95/MS IntelliMouse
- 3 Year Limited Warranty† with 1 Year On-site Service△

**$3399**

Business Lease◊: $126/Mo.
Order Code #500612

### *NEW* DELL DIMENSION XPS H266
266MHz PENTIUM II PROCESSOR

- Mini Tower Model
- ★ **32MB EDO Memory**
- 512KB Integrated L2 Cache
- ★ ***NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)**
- ★ ***NEW* 1000LS Monitor (15.9" v.i.s.)**
- Matrox Millennium 4MB WRAM Video Card
- ★ ***NEW* 24X Variable EIDE CD-ROM Drive**
- Integrated Yamaha 16-Bit Sound
- Altec ACS-90 Speakers
- Iomega Zip 100MB IDE Internal Drive with One Cartridge
- ★ **MS Office 97 Small Business Edition plus Bookshelf**
- MS Windows 95/MS IntelliMouse
- 3 Year Limited Warranty with 1 Year On-site Service

**PICTURED SYSTEM**

**$2999**

Business Lease: $111/Mo.
Order Code #500608

### *NEW* DELL DIMENSION XPS M233s
233MHz PENTIUM PROCESSOR
WITH MMX™ TECHNOLOGY

- Mini Tower Model
- ★ **32MB SDRAM Memory**
- 512KB Single Bank Pipeline Burst Cache
- 3.2GB Hard Drive (12ms)
- ★ ***NEW* 1000LS Monitor (15.9" v.i.s.)**
- 4MB EDO ViRGE 3D Video Card
- ★ ***NEW* 24X Variable EIDE CD-ROM Drive**
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers
- ★ **MS Office 97 Small Business Edition plus Bookshelf**
- MS Windows 95/MS IntelliMouse
- 3 Year Limited Warranty with 1 Year On-site Service

**$2399**

Business Lease: $89/Mo.
Order Code #500610

### DELL DIMENSION M200a
200MHz PENTIUM PROCESSOR
WITH MMX TECHNOLOGY

- Mini Tower Model
- ★ **16MB SDRAM Memory**
- 512KB Single Bank Pipeline Burst Cache
- 2.1GB Hard Drive (12ms)
- 15LS Monitor (13.7" v.i.s.)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive
- 2 Universal Serial Bus (USB) Ports
- ★ **MS Office 97 Small Business Edition plus Bookshelf**
- MS Windows 95/MS Mouse
- 3 Year Limited Warranty with 1 Year On-site Service
- ★ *Upgrade to 32MB SDRAM, add $119.*
- ★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*

**$1899**

Business Lease: $70/Mo.
Order Code #500611

## 6.4GB HARD DRIVE WITH BUILT-IN 512KB CACHE.

With the newest Dell Dimension XPS H266, the only performance enhancing you'll find is smart engineering. Sure, the XPS H266 with the Pentium® II processor starts out with a performance boost of up to 21% over the 200MHz Pentium® Pro processor, and combines the benefits of a Pentium Pro processor and Intel's® MMX™ technology. But that's where the similarities to other 266MHz systems end. We've added a 6.4GB hard drive sporting its own amazingly large 512KB cache, resulting in a superior data transfer/throughput rate that can be up to 20% faster than other 6.4GB hard drives. So give us a call and we'll build you what *Windows Magazine* says "...beats the pack in terms of performance and overall value." The new Dell Dimension XPS H266. And prepare to run the only test that counts: the one you put it through every day.

DELL®

**TO ORDER TOLL-FREE**

**800-964-5870**

**TO ORDER ONLINE**

www.dell.com/buydell

Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D

Keycode #03262

MMX™ intel inside pentium® II PROCESSOR

†For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. △On-site service provided by an independent third-party provider. May not be available in certain remote areas. *x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ★Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. ©1997 Dell Computer Corporation. All rights reserved.

Accelerate your HD up to 500%*

Launch programs faster

Multi-task faster

Windrenalin HD – think of it as adrenaline for Windows 95

windrenalin hd

## Here are the numbers

And they speak for themselves. PCTest measured how much faster you can launch these applications, even while multi-tasking (four intense, concurrent disk access processes).

*While results may vary based on your system, applications and nature of multi-tasking, we think you'll be impressed.

*check out this control panel*

# show me the numbers

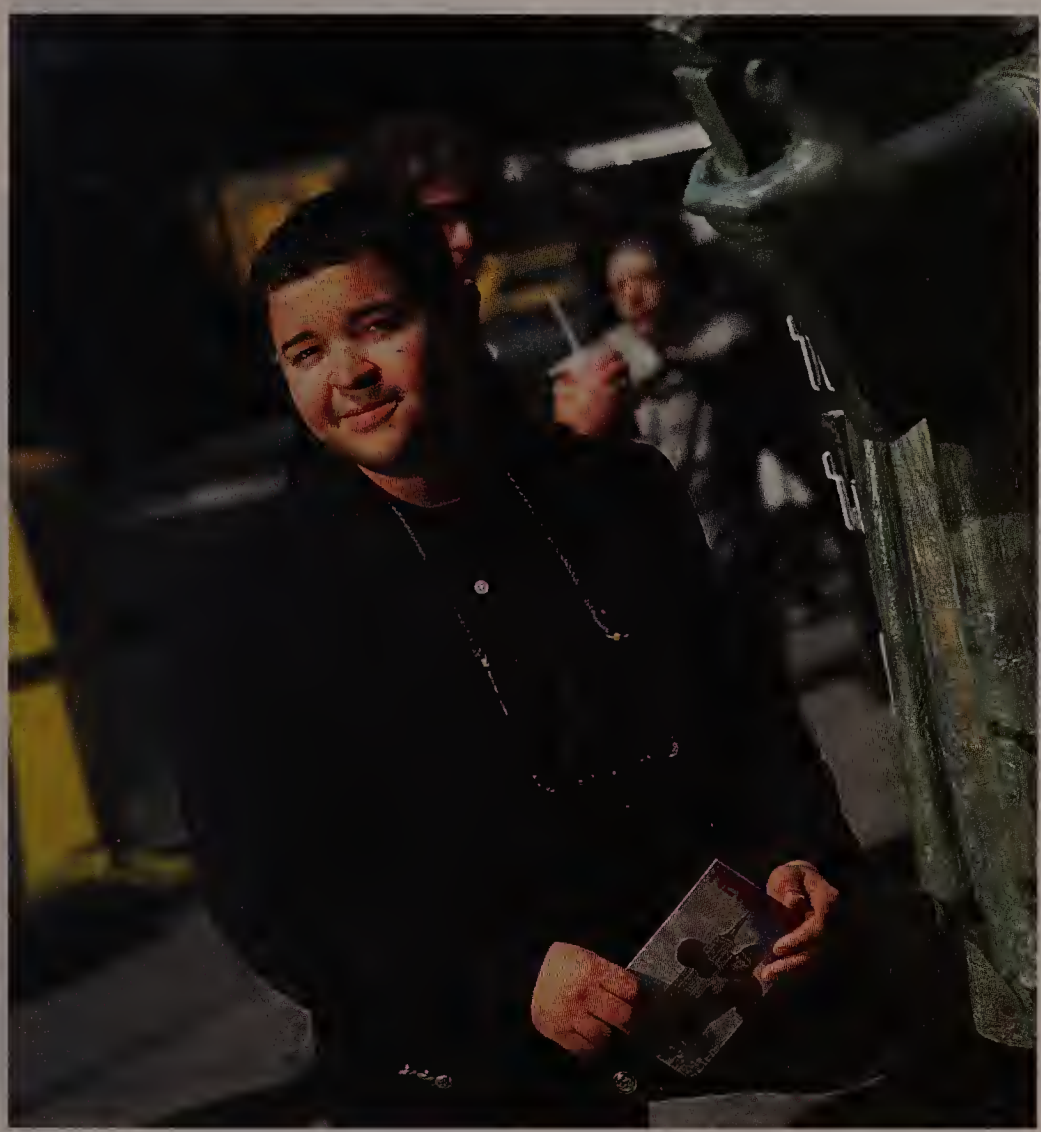
www.syncronys.com

©1997 Syncronys Softcorp. All rights reserved. Syncronys, the Syncronys logo and Windrenalin HD are trademarks of Syncronys Softcorp. All other trademarks are the property of their respective holders.

**Circle 232 on reader service card**

# Install ISDN and Shed No Tears

*Retail Communications art director Gregory Etheart needed a fast data connection for his business but dreaded installing ISDN. Then he discovered an easy way out.*



**THE PROBLEM** When you need to transmit files and surf the Web at high speeds, an Integrated Services Digital Network line is the most affordable option. But the complexity of configuring an ISDN line to work with a particular modem or router has been known to reduce some stout-hearted souls to tears. This month Gregory Etheart, an art director at the New York–based advertising agency Retail Communications Corporation, explains how his company avoided the ISDN installation blues. —*Editor*

We're a relatively small ad agency with some big-name clients—Calvin Klein, Giorgio Armani, and Tiffany's among them. In this competitive business, we must move quickly and meet deadlines. We have to stay up on the latest trends, including surfing the Internet, downloading software updates, and exchanging e-mail messages.

We were using 28.8-kbps modems and regular telephone lines. But the wait for Web pages to scroll across the screen was too long. There was a more serious problem, too. Whenever we had a last-minute change to a layout, we needed to send updated files to our printer in Chicago—but our only viable option was transmitting files with our 28.8-kbps modems. That could tie up a computer for three or four hours, and frequently the connection would drop and we'd have to start all over—or the file would be corrupted and we'd have to send it again.

The solution to all this seemed obvious: Get a digital connection to the outside world. Being a small business, though, we couldn't afford a dedicated T1 line. That left us with ISDN. But we'd heard the horror stories about how frustrating it can be to configure an ISDN router or modem. While I have a fairly good grasp of technology, I'm not a telecommunications expert, nor is anyone else at our company. It was clear we would need help setting up the two ISDN lines we wanted to install (one for each of our Ethernet networks).

## THE SOLUTION: HIRE AN EXPERT

I WASN'T SURE where to find that help, though. We had hired a company to network our PCs and Macs, but its fees were high and we weren't thrilled with the result. Then we heard about Up & Running, Guaranteed, a national ISDN service from Farallon Communications that promises to handle all the dirty details for you.

Up & Running is available for individuals and businesses that have a Farallon Netopia ISDN modem or router. When you sign up for the service, a rep asks about your network or PC. The rep then calls your local ISDN provider, tells the provider what kind of network environment or computer system you're using, sets up your ISDN account, and schedules the installation.

In addition, Farallon will usually work with one of its Internet service providers to set up your ISDN Internet account. But at the time—the fall of 1996—Farallon didn't have any ISP partners in the 212 area code of Manhattan. ▶

As a result, I had to interview several ISPs and set up the ISDN Internet account on my own. But once I set up an account, my Up & Running representative got in touch with my new ISP, then called me with the setup information I needed to get onto the Internet. (At press time, a Farallon spokesperson said the company had 110 ISP partners nationwide, with 12 in the New York metro area. —*Editor*)

But here's the best part: The folks at Farallon—not me—took care of remotely configuring our Netopia routers to work with our ISDN lines. And they did it without having to come to our office. We bought two Netopia routers from Farallon that came with 19.2-kbps PC Card modems along with Farallon's Timbuktu Pro remote access software. Farallon's technical support people were able to dial in to our routers and remotely make all the software adjustments. Along with the Up & Running service, the package cost us about $3000—and was well worth it, considering the increased bandwidth we got and the peace of mind we enjoyed because Farallon took care of the details.

The Up & Running service includes a year of tech support, but we've used it only a couple of times. Soon after the installation was completed, I noticed that a file downloaded from the Web more slowly than it should. I called Farallon, and a rep went through the possibilities with me and discovered that a channel on the ISDN line hadn't been properly initialized. The rep contacted Nynex (our ISDN provider), and Nynex fixed the problem.

Since we've been using ISDN, Internet access seems almost instantaneous. Web sites pop up in seconds, and it takes very little time to download software updates. We're also saving a lot of time getting files to our printer. A file that used to take an hour to transmit now takes about 15 to 20 minutes. Because we now have a fast way to send and receive files, our ISP has set up a File Transfer Protocol site for us. We can now upload files to the FTP site, and our printer can go there to download the file. This keeps us from having to deal with the inconvenient direct modem-to-modem transfer we previously used.

I also use the FTP site when I work at home. The only problem is, I'm using a 28.8-kbps modem at home. Maybe I'll get an ISDN connection there, too—now that I know I don't have to set it up myself.

*Edited by James A. Martin*

**• Up & Running, Guaranteed $499 (street) for each workgroup or router, $99 (street) for individual users; Timbuktu Pro for Windows $139, twinpack (street); Farallon Netopia ISDN modem $349 (street); Farallon Netopia ISDN router $699 to 1099 (street); Farallon Computing, Inc.; 800/759-7761; www.farallon.com**

READER SERVICE NO. 623.

*James A. Martin is a* PC World *contributing editor. If you use PCs for management in your business, we want to hear from you. We pay $300 for published columns.* *See page 14 for contact information.* ■

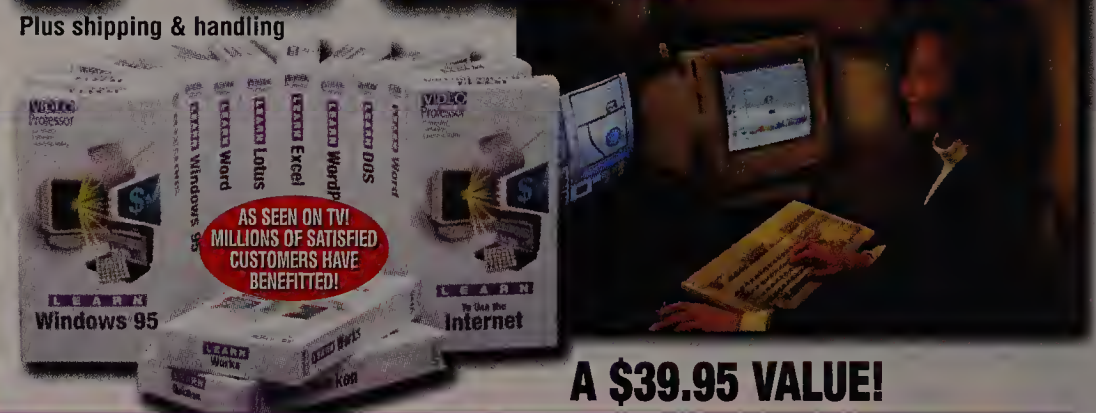

*Special Introductory Offer from VIDEO PROFESSOR®*
*— The Best Computer Instructor in the World!*

**EASY COMPUTER TRAINING**
**on video that takes only one hour, and it's yours...**

***Why are we making this Incredible Offer?***

*We're so confident that once you try our exceptional "What-You-See-Is-What-You-Do" learning method, you'll turn to us for all of your computer learning needs.*

**FREE!**
Plus shipping & handling




**A $39.95 VALUE!**

***Choose From WINDOWS 95, INTERNET, DOS, MS WORD, WORDPERFECT, LOTUS, EXCEL, WORKS and QUICKEN.***

*Simply call us and let the operator know which software you would like to learn.**

**Also Available on CD-ROM**
*Watch the same video lesson right on your computer.*
*Call for availability.*

**Call Now! Supplies are Limited! Operators are Standing By!**

**Fast Delivery!**

**1-800 554-2050 ext.008**

*If line is busy, please call us at 1-800-762-9999 http://www.videoprofessor.com*
***Businesses Welcome! Call 1-800-8990, ext.347 for Retail or Corporate Orders.***
**Due to the overwhelming demand, please be prepared to give the operator your first choice and two alternative selections.*

VIDEO Professor

No obligation to purchase — You only pay a non-refundable $4.95 for shipping and handling, conveniently billed to your MasterCard, VISA, Discover or AMEX. When you call, you will be given the option to receive a second video to review with no obligation to purchase. IBM & compatibles only. Limit one free title per household. Running time approximately 60 minutes. Some restrictions may apply.

**Circle 245 on reader service card**

# Upgrade Now! APC's Trade-UPS™ Plan boosts Web server power protection

*Now you can easily trade in your old UPS for discounts toward enhanced APC protection. Plus, discover the myths and musts of web server protection. See how Smart-UPS® seamlessly integrates with and provides graceful shutdown for major web platforms, including Windows NT and Solaris. The bundled PowerChute* plus *WebAgent™ lets users manage their UPS via web browser. Get your FREE handbook today!**

**"...Inherent flexibility and excellent software... Don't be caught without one."**

○ **Yes!** I'm interested in trading up an older APC or competitors' UPS to a Smart-UPS. Please send Trade-UPS information.

○ **No,** but I would like a FREE Handbook!

Name: _____

Company: _____

Title: _____

Address: _____

_____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____

Brand of UPS used? _____ # _____

Brand of PCs used? _____ # _____

Brand of Servers used? _____ # _____

* We regret we cannot fulfill incomplete requests.

Dept. P3-WEB

APC®

**888-289-APCC x8162**

**http://www.apcc.com**

©1997. APC. All rights reserved. Smart-UPS, Trade-UPS and SmartSlot are trademarks of American Power Conversion. SU02EBRC. Fax: 401-788-2797. Worldwide: (+1)401-789-0204. PowerFax Literature: 800-347-FAXX.

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

# BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON, RI

POSTAGE WILL BE PAID BY ADDRESSEE

APC®
AMERICAN POWER CONVERSION

DEPT. BRC-P3-WEB
132 FAIRGROUNDS ROAD
PO BOX 278
WEST KINGSTON RI 02892-9920

# Our new Smart-UPS® ensures the web hits you *want*... and prevents those you *don't*

## Web-enabled PowerChute® *plus* now ships with every Smart-UPS®

Protect ME! APC

Whether you're using the web to sell or support, once you invest in a web server and operating system, you've made a commitment to yourself, your company and your customers. However, without power protection, you risk losing your expensive software, hardware, and data, and the opportunity to interface with new prospects and existing customers. That's why the worlds most reliable power protection is now available to meet your web-based needs.

Smart-UPS® ensures your web server is always there, like you promised. Don't become a statistic! Power problems damage hardware, and are the leading cause of data-loss.

APC Smart-UPS ensures protection from surges, spikes and lost power. Backed by a $25,000 lifetime equipment protection guarantee, Smart-UPS brings the confidence of APC to the excitement and opportunity of the Web.

All 120V Smart-UPS now include FREE Web enabled PowerChute *plus* software for safe web server and OS shutdown. PowerChute *plus* protects system and data integrity by automatically shutting down server applications and operating systems.

PowerChute *plus*' FlexEvents™ feature can page you when an out-of-bounds environmental condition occurs. APC's NEW WebAgent™ allows administrators to manage their Smart-UPS via their browser. NEW WebAlert™ notifies users of Web server shutdown.

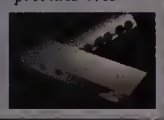
Instead of increasing your risk by waiting, join over 8,000,000 satisfied computer users worldwide who prefer APC to protect hardware and data.

*Smart-UPS now ships with PowerChute plus power management software with WebAgent, to make Smart-UPS browser-manageable. (Ships free with 120V Smart-UPS only.)*

SCO OK · Solaris Compatible · Runs With Lotus Notes · Ready! for OS/2 · Microsoft Windows NT Compatible

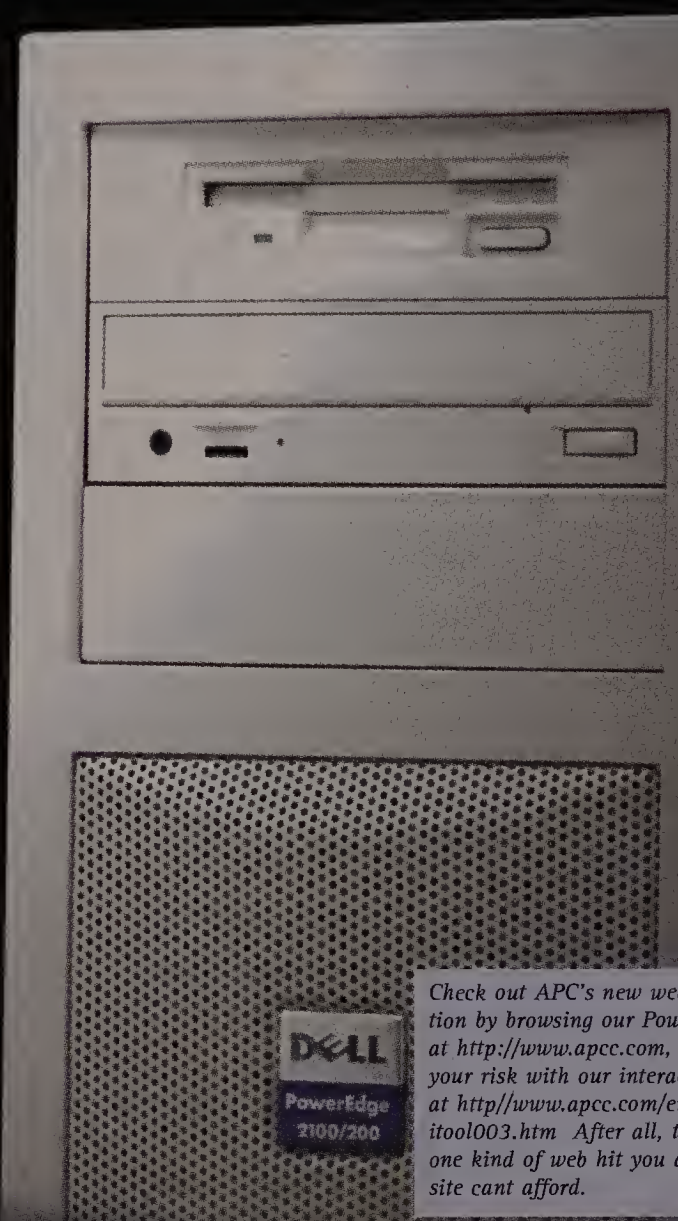
*APC's award-winning Smart-UPS units are available in convenient rack-mount models. The Smart-UPS XL series is recommended for long runtime applications. For maximum protection, ask about our new NetShelter™ premium rack enclosures for all server and internetworking equipment sales.*

*APC's MasterSwitch™ provides Web /SNMP-manageable, independent control of power to connected loads.*



***"...inherent flexibility and excellent software. Don't be caught without one"***

PC MAGAZINE EDITORS' CHOICE™ November 19, 1996 APC Smart-UPS 1000




*Check out APC's new web solution by browsing our PowerPage™ at http://www.apcc.com, or assess your risk with our interactive quiz at http//www.apcc.com/english/itool003.htm After all, there's one kind of web hit you and your site cant afford.*

**To receive FREE information about PowerChute *plus* with WebAgent, just complete this coupon and mail or fax to APC**

☐ **YES!** I'd like more information about new PowerChute *plus* software with WebAgent

☐ **NO** I'm not interested at this time but please send my FREE Power Protection Handbook.

Name: _____

Title: _____

Company: _____

Address: _____

_____

City/Town: _____

State: _____ Zip: _____ Country _____

Phone: _____

Brand of UPS used? _____ # _____

Brand of PCs used? _____ # _____

Brand of Server used? _____ # _____

APC®

**(888) 289-APCC x8162**

**Fax: (401) 788-2797 • http://www.apcc.com**

Dept. PC-WEB

©1997 APC. All Trademarks are the property of their owners. SU02EF • (800)347-FAXX PowerFax • CompuServe: GO APCSUPPORT • 132 Fairgrounds Road, West Kingston, RI 02892 USA

*APC has won more awards for reliability than all other UPS vendors combined.*

W 100 Winning Magazine 1996 · Network Computing Editor's Choice · LAN Times Reader's Choice '96

*Visit our Booth #3032 at PC Expo in New York!*

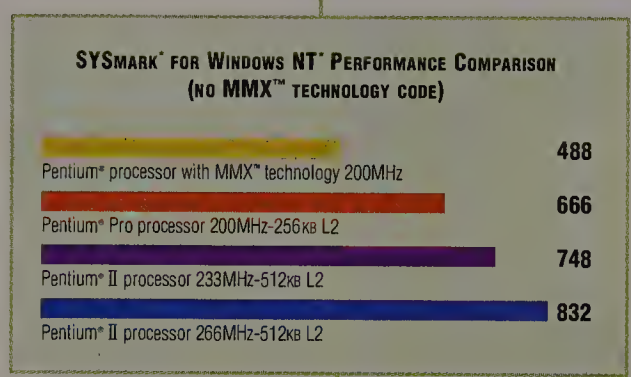
**Circle 8 on reader service card**

# Welcome to chapter two.

*The new Pentium® II processor. Read on.*

When it comes to microprocessors, Intel wrote the book. That's why our new Pentium® II processor offers even more power than the Pentium® Pro processor and all the benefits of Intel MMX™ media enhancement technology.

Its sleek new package incorporates Intel's Dual Independent Bus architecture, an advanced design that uses two separate buses—one linked to the L2 cache and the other dedicated to the main memory. This allows the processor to access data from either of its buses simultaneously and in parallel rather than in a singular sequential manner. The result is faster information transfer and a boost in overall performance.†




The new Intel Pentium II processor. It's everything you need for your next chapter in desktop computing. To find out more, visit our Web site.

► www.intel.com/PentiumII

intel®
The Computer Inside.™

© 1997 Intel Corporation. *All other trademarks are the property of their respective owners. †As compared to Pentium® processor-based systems without Dual Independent Bus architecture as measured by the SYSmark* for Windows NT* Performance Comparison (no MMX™ technology code).

pentium® II
PROCESSOR
intel

{The sun will come up}

{Your ADI monitor will come on}

| THE NEW MicroScan 5G | THE NEW MicroScan 6G |
|---|---|
| 17" (16" viewable area) | 21" (20" viewable area) |
| invar shadow mask | invar shadow mask |
| 0.26mm dot pitch | 0.28mm dot pitch |
| Max. Res. 1600 x 1200 @ 75Hz | Max. Res. 1600 x 1200 @ 75Hz |
| PC & Mac Compatible | PC & Mac Compatible |
| TCO '95 | TCO '95 |
| OSD | OSD |
| Horizontal Frequency 30-95KHz | Horizontal Frequency 30-95KHz |
| Vertical Frequency 50-160Hz | Vertical Frequency 50-160Hz |
| 3 Year Warranty | 3 Year Warranty |

©1997 ADI Systems, Inc. 2115 Ringwood Avenue, San Jose CA 95131. MicroScan is a trademark of ADI Systems, Inc.

# what you can count on, everyday

Some things you just expect from your day. The sunrise. A cup of coffee. A reliable monitor. At ADI we've made it our top priority to become an essential element in your daily routine. Case in point: The MicroScan 5G 17" (16"V) and the MicroScan 6G 21" (20"V) – the first in our MicroScan Graphics Series. You'll love the sophisticated digital design. Ultra-high (1600x1200) resolution. Flat anti-glare, anti-reflection screen. Rely on the MicroScan 5G and the MicroScan 6G for all your DTP, CAD/CAM, Multimedia and Image Processing. And like every monitor in the ADI lineup, each is backed by a hassle-free, three-year warranty. The MicroScan Graphics Series, as dependable as the day is long.

**1-800-228-0530 www.adi-online.com**

**Circle 3 on reader service card**

ADI

Office 97's e-mail and First Aid 97 problems ◆ Norton Utilities security fix

# Outlook 97 Patches Privacy Problem

IF YOU'RE SENDING e-mail through Microsoft Office 97's Outlook application, you may be letting everyone know who you're corresponding with. That's because Outlook's Internet Mail service mistakenly includes blind-carbon-copy addressees—names on your address list that are supposed to be invisible to other recipients—in the message's header information. Outlook doesn't display header information when you view messages, but other mail programs do.

To fix this, Microsoft has released a beta version of the Internet Mail Enhancement Patch for Outlook 97. You'll find a link to the 500K update file at www.microsoft.com/OfficeFreeStuff/Outlook. In addition to fixing the blind cc: bug, the update adds new features that serious Internet mail users require. The most notable is the ability to leave copies of messages on the server—a real convenience if you want to read the same e-mail on two different computers. Other improvements include the ability to quote original messages in replies using standard prefix characters such as > and :, support for multiple mail accounts, disabling of Rich Text Format message content by default, and a fix for a problem that causes mail messages from some POP3 servers to be delivered with a date of 2/1/97.

## FIRST AID 97 CLASHES WITH OFFICE 97

**BUG** Your system may crash if you run CyberMedia's First Aid 97 and any Microsoft Office 97 application at the same time.

**FIX** The most recent First Aid patch fixes the conflict. Click First Aid 97's Update button to download and install the 1.6MB patch using the included Oil Change utility, or read CyberMedia's detailed instructions on manually updating the program (www.cybermedia.com/products/firstaid/update97.html).

## NORTON'S INSECURE UTILITIES

IT'S THAT OLD ActiveX acting up again, and this time its cohort is Symantec's Norton Utilities. Symantec was chagrined when rival utility vendor McAfee Associates discovered and publicized a potential security hole in Norton Utilities 2.0. Seems that if you've got version 2's ActiveX-based System Genie installed and you're surfing the Web with Microsoft's Internet Explorer, your system is open to attack from ActiveX controls that unscrupulous developers can put on their Web pages. Both Symantec and Microsoft agree that the fault is Symantec's. As we went to press, there were no known cases of anyone using this flaw for malicious purposes. But now that McAfee has, uh, let the genie out of the bottle, such abuse is suddenly likely.

The simplest way to update your copy is through Norton Utilities' LiveUpdate feature. Start Norton System Doctor, right-click the *LiveUpdate* panel, and choose *Launch LiveUpdate*. (If LiveUpdate isn't there, select *View•Options•Active Sensors* and add *Norton Utilities LiveUpdate*.) For more extensive LiveUpdate instructions, see www.symantec.com/nu/lu48.html.

If you'd rather download and install the 1.3MB patch manually, go to the Symantec Web page sos.symantec.com/ftp/nutilftp.html and click on the link to nu20ptch.exe.

## PROCOMM STOMPS A BUG SWARM

HAVING TROUBLE WITH your copy of Procomm Plus 4.0 for Windows 95? You may want to download the 1.7MB version 4.01 update. You can find this on Quarterdeck's FTP server at ftp.datastorm.com/pub/pw4-us/w4uu0001.exe. The company also lists the 50 most significant bugs fixed in the new version at its Web page support.quarterdeck.com/patches/pw4uu0001.html.

If you installed Procomm using the CD Minimal option, however, the patch is no solution, since the problem files reside on your CD-ROM. To order a new disc, call Quarterdeck at 800/354-3222 or 573/443-3282.

*Files from this article are available on PC World Online (www.pcworld.com/software_lib). Scott Spanbauer is a* PC World *contributing editor.* ■

### IN BRIEF

#### PartitionMagic 3.03

POWERQUEST CONTINUES to refine its fixes to PartitionMagic. The latest revision (3.03) fixes an NT File System-related problem in the progress-report graph, properly updates Windows NT's boot.ini file when you add and remove partitions, and smooths an installation error. The update files for versions 3.0, 3.01, and 3.02 (525K to 625K) are at www.powerquest.com/download/update3.html.

#### New Matrox Drivers

ACCORDING TO MATROX, the latest drivers for its 3-D graphics adapters boost performance, add new PowerDesk features, and eliminate printing errors. Millennium drivers are at www.matrox.com/mgaweb/drivers/ftp_mill.htm. Mystique fixes are at www.matrox.com/mgaweb/drivers/ftp_myst.htm.

### BUGGED?

FOUND A HARDWARE OR SOFTWARE BUG? Tell us about it via e-mail at bugs@pcworld.com.

Apparently, your e-mail h
MMX
intel inside
pentium
©1997 Hitachi PC Corporation (USA). All rights reserved. VisionBook™ and Mobilized Computing™ are trademarks of Hitachi PC Corporation (USA), which may be registered in some jurisdictions.The Intel Inside Logo & Pentium® are registered trademarks and MMX is a trademark of Intel Corporation.. All other marks are owned by their respective companies. All x2 products are capable of 56Kbps downloads; however, due to FCC regulations which restrict power output, current download speeds are limited to 53Kbps. Model shown is 6630X and specs quoted apply to that model. Specifications and availability subject to change without notice.

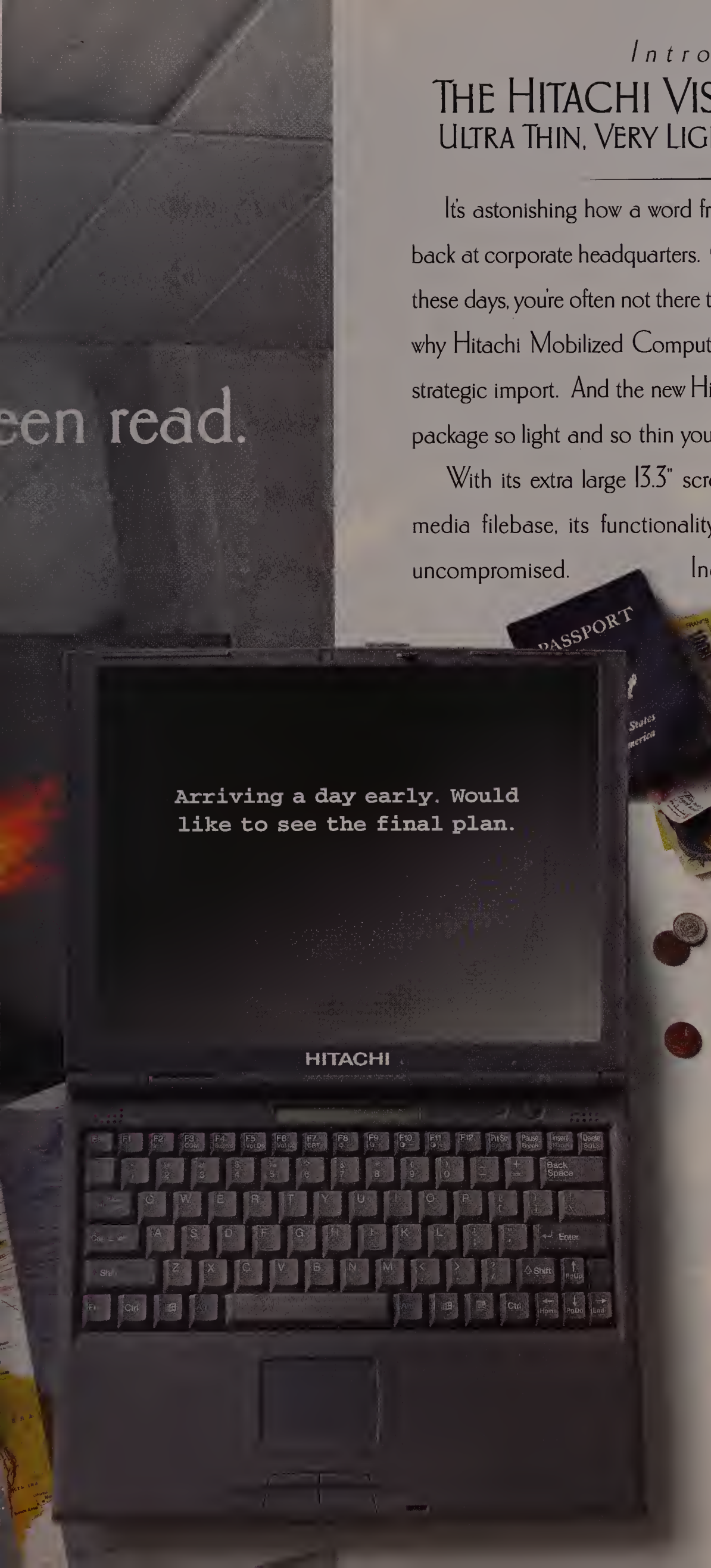
*Introducing*

# THE HITACHI VISIONBOOK ELITE.

## ULTRA THIN, VERY LIGHT, PANORAMIC SCREEN.

It's astonishing how a word from you really gets the wheels moving back at corporate headquarters. Of course, given how business is done these days, you're often not there to put out the word in person. Which is why Hitachi Mobilized Computing™ technology is a business tool of strategic import. And the new Hitachi VisionBook Elite™ delivers it in a package so light and so thin you'll take it wherever business takes you.

With its extra large 13.3" screen, hyper-fast X2™ modem, and slim media filebase, its functionality and communications abilities are uncompromised. Including access to information and graphics on the Internet or your company server. The Hitachi VisionBook Elite. Roam the planet as you must, your influence at the home base remains undiminished.




### SIGNIFICANT FEATURES:

Extremely thin (1.4") and light (5.15 lbs)
Super large 13.3" TFT display, XGA resolution
166MHz Intel® Pentium processor with MMX™ technology for superior video
Hyper-quick U.S. Robotics® X2™ modem – the fastest in a notebook.
Slim filebase with 10x CD ROM and 3.5" floppy drive.
16MB EDO RAM, upgradable to 80MB
Lithium-Ion battery pack
2.1 GB removable hard drive.

HITACHI
MOBILIZED COMPUTING™

Call 1-800-Hitachi
www.HitachiPC.com

**Circle 109 on reader service card**

PCW 0797

# I Lost Your Number

# No Excuses

*That's the whole idea behind our reliable new workgroup printers — the Fujitsu PrintPartner® 10V and PrintPartner 14AV.*

*Two exceptional printers designed to set new standards for price, performance and reliability.*

*Here's where the No Excuses℠ part comes in. Fujitsu backs each printer with an industry leading one-year warranty, so in the unlikely event of a breakdown, your printer will be replaced within two business days.*

*No Excuses.*

*And as you might expect, coming from Fujitsu — the world's second largest computer company — these new workgroup printers have the speed and performance you want. And the price? Let's just say there's no excuse to own anything else.*

*For the PrintPartner dealer nearest you, call 1-888-561-2035 today.*

PrintPartner 14AV*

PrintPartner 10V

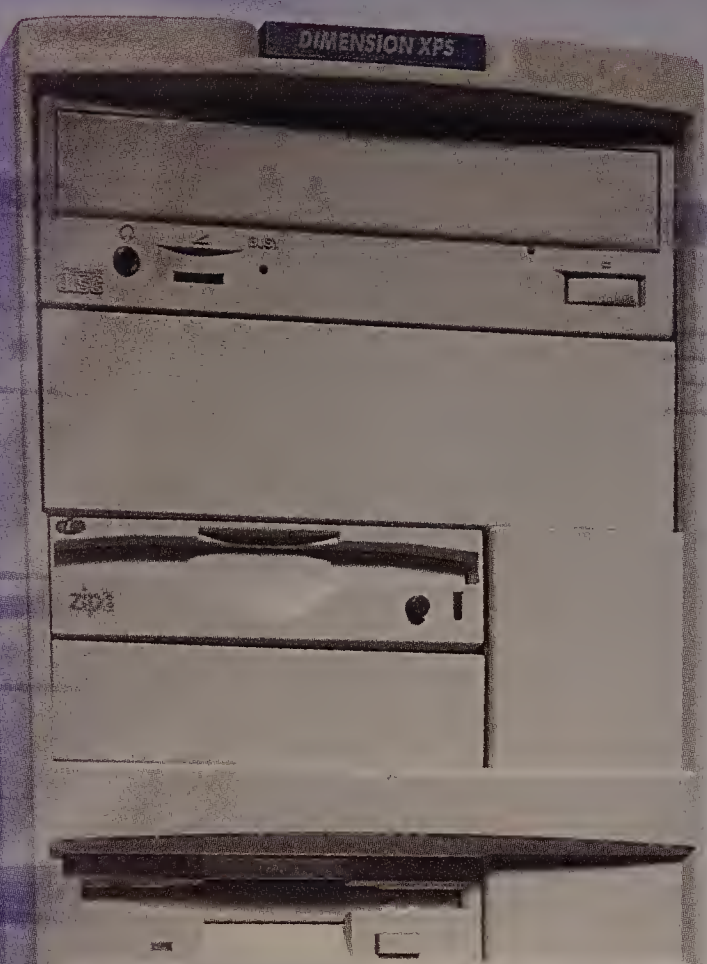
FUJITSU

**Download your free No Excuses Screensaver at www.fcpa.com.**

©1997, Fujitsu Computer Products of America, Inc. All rights reserved. No Excuses is a service mark of Fujitsu Computer Products of America, Inc. All other trademarks are the property of their respective companies. *Shown with optional second 500-sheet paper tray.

**Circle 100 on reader service card**

# TOP OF THE NEWS

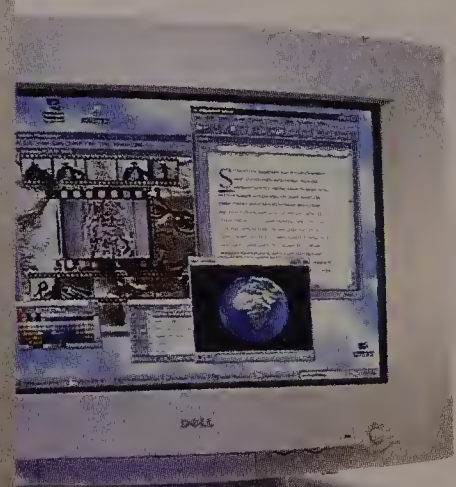



# Affordable Computers Never Looked Better

GREAT NEWS: You no longer need to spend top dollar to buy a powerful computer. But take a deep breath because in the past two months vendors have produced a perplexing array of products. In our May and June issues we wrote about the first Advanced Micro Devices K6 and Intel Pentium II-266 systems; now Pentium II-233 and Pentium MMX-233 systems have also arrived. The new PCs overlap dramatically in both price and performance; sorting out which one to buy is more complex than ever.

To make it easier on yourself, first assess your needs. If you require absolutely top business and multimedia performance, choose a Pentium II-266 PC. You can find a loaded Pentium II-266 system for as little as $3000.

For more modest needs, systems based on the AMD K6-PR233, Intel Pentium II-233, or Intel Pentium MMX-233 are effectively comparable in performance, within a few percentage points on average. Nearly all run both business and multimedia software extremely quickly, so you don't need to buy the most expensive model. In general, this means you can pass over systems based on the Pentium II-



**MID-RANGE SPEEDSTERS: Dell's Dimension XPS M233s and (opposite) Gateway 2000's G6-233M.**

PHOTOGRAPHS: JOHN GREENFIELD; DIGITAL ILLUSTRATION: NICK FAIN; DIGITAL ICONS: JEFFREY BELO

# Can't buy the fastest power systems? Take heart. New 233-MHz Pentium MMX computers are great deals—even better than new 233-MHz Pentium IIs.

233, which average $100 to $300 more than comparable units based on the Pentium MMX-233 or K6 processor.

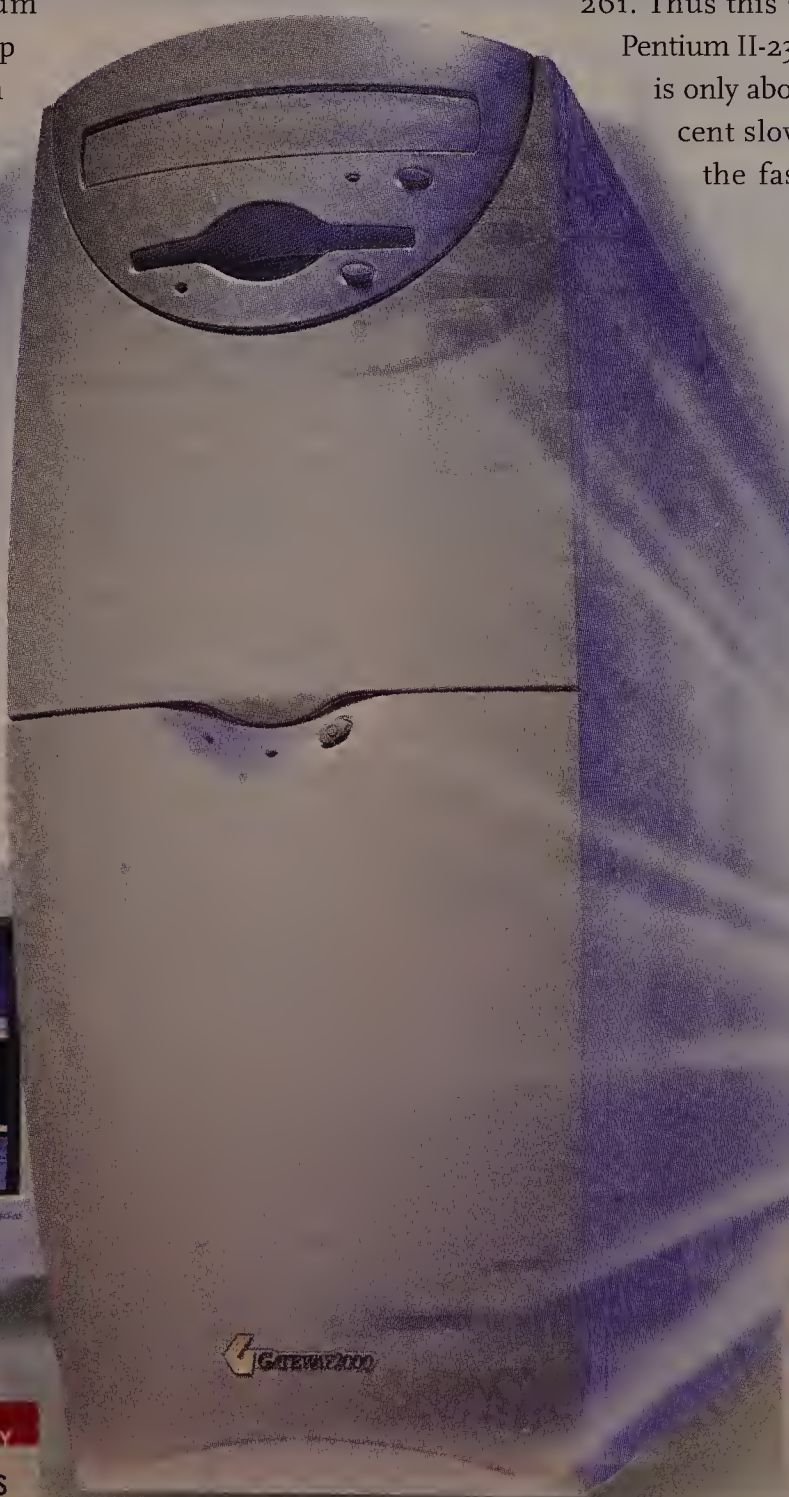
### A CROWDED FIELD

THE PENTIUM II, which supports the MMX instruction set found in Pentium MMX processors, is Intel's foreseeable future. The Pentium II-233 is the bottom of the Pentium II line. The Pentium MMX-233 chip is the top member of the Pentium MMX family, and perhaps the last of its kind.

If you're currently using a Pentium system without MMX technology and upgrade to a Pentium II-233 or a Pentium MMX-233, you will notice a real difference in your work with business and multimedia applications. Your choice between a Pentium II-233 and a Pentium MMX-233 will likely come down to price; the two types of systems have similar performance with real-world tasks, and so far neither processor technology offers upgrade options.

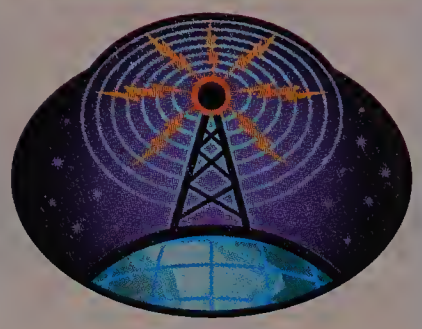
Just how fast are they? *PC World* tests show both Pentium II-233 and Pentium MMX-233 systems crank right through business applications—in most cases, their speed difference from that of a Pentium II-266 is less than 10 percent. It's only in multimedia tests that the Pentium II-266 demonstrates substantially more power.

The Gateway 2000 G6-233M—fastest of the three Pentium II-233 systems tested—scored an impressive 251 on the PC WorldBench business-productivity test suite. The average score for Pentium II-266 machines was 261. Thus this Gateway Pentium II-233 system is only about 4 percent slower than the fastest ▶




EDITED BY
Charles Piller and Randy Ross

## JUST IN



### Microsoft Prepares Word 97 Fix

IN MID-JULY MICROSOFT will release a free, downloadable service release that fixes backward-compatibility problems in the Word component of its Office 97 suite. Currently, Word 97's file format is not compatible with previous versions of Word. The Save As Word 6.0/95 option actually saves files in Rich Text Format, or RTF, with a .doc extension. This glitch has created numerous headaches for users, including formatting problems, error messages, and incorrect characters. It also makes files much larger than expected. The service release will eliminate the automatic saving of files in RTF format.

### Compaq Ends $35 Support Fee

AFTER MONTHS of complaints from customers, Compaq has rescinded its policy of charging $35 per tech support call for its Presario line of PCs during the warranty period. Customers will still pay $35 per question, or $2 per minute (up to a maximum charge of $30) via a 900 line after the warranty period. Compaq also announced a quadrupling of its online support staff, and expects to respond to online queries within 48 hours. ▶

INTERNET

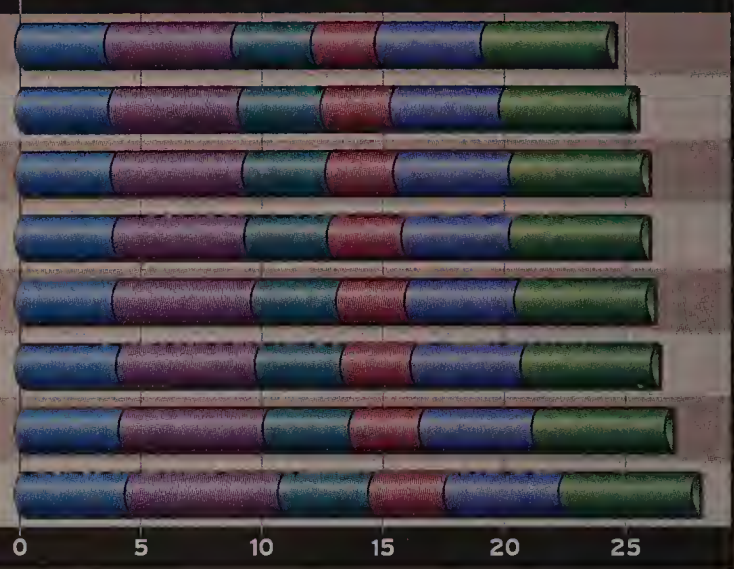
online

GET UP TO THE MINUTE NEWS, including RealAudio daily news summaries, hot game demos, the latest reviews, and productivity shareware, at PC World Online. Just point your browser to www.pcworld.com/news.

# Plenty of Power for Mid-Range Systems

## PENTIUM MMX-233 SYSTEMS NEAR PENTIUM II-233 SPEEDS

| SYSTEMS | CPU | RAM (MB) | Secondary cache (K) | PC WorldBench score |
|---|---|---|---|---|
| Average for 6 Pentium II-266 PCs | Pentium II-266 | 32 | 512 | 261 |
| Gateway 2000 G6-233M | Pentium II-233 | 32 | 512 | 251 |
| Quantex QP6/233 SM-3 | Pentium II-233 | 32 | 512 | 247 |
| AST Bravo LC 6233 | Pentium II-233 | 32 | 512 | 244 |
| Dell Dimension XPS M233s | Pentium MMX-233 | 32 | 512 | 243 |
| Gateway 2000 G5-233 | Pentium MMX-233 | 32 | 512 | 240 |
| Quantex QP5/233 SM-3 | Pentium MMX-233 | 32 | 512 | 236 |
| Average for 9 Pentium MMX-200 PCs | Pentium MMX-200 | 32 | 256 | 231 |




Word 7.0 for Windows 95 · Picture Publisher 6.0 for Windows 95 · WordPerfect 6.1 for Windows
Excel 7.0 for Windows 95 · Paradox 5.0 for Windows · 1-2-3 release 5 for Windows

## STRONG MULTIMEDIA SYSTEMS

| SYSTEMS | Macromedia Director movie viewing (Frames per second) |
|---|---|
| Average for 6 Pentium II-266 PCs | 93 |
| Gateway 2000 G6-233M | 88 |
| Quantex QP6/233 SM-3 | 88 |
| AST Bravo LC 6233 | 96 |
| Dell Dimension XPS M233s | 86 |
| Gateway 2000 G5-233 | 86 |
| Quantex QP5/233 SM-3 | 81 |
| Average for 9 Pentium MMX-200 PCs | 81 |

Adobe Photoshop image editing · Ray Dream Studio 3D redraw

## How We Test

**Business applications:** We tested all systems with PC WorldBench, PC World's Windows 95 application-based benchmark. Higher scores are better. For a description of PC WorldBench 1.0 tests, see PC World Online (www.pcworld.com).

**Multimedia applications:** We tested each system using a series of MMX-enabled applications. In Adobe Photoshop 4.0, we time several image editing operations. In Fractal Ray Dream Studio 3D, we time how long it takes to redraw rendered 3-D scenes at two levels of complexity. In Macromedia Director 5.0, we play a graphics-intensive Director executable file.

Data based on testing conducted by the PC World Test Center. All rights reserved.

class of PCs we've ever tested.

The problem is that Pentium II-233 PCs don't cost much less than Pentium II-266 machines—perhaps $200 to $300. The Gateway 2000 G6 model with 16-bit wavetable sound, speakers, and a 56-kilobits-per-second x2 modem is $2769 (a model without these components from Gateway or AST costs $2499). A comparable Pentium II-266 system from Quantex costs only $2999.

Pentium II-233 systems may make more sense this fall when the Accelerated Graphics Port, a technology expected to speed 3-D performance, should arrive. Serious gamers and multimedia enthusiasts may want to wait.

With strong price/performance, Pentium MMX-233 systems make sense for many people right now: Our testing shows that systems using the Pentium MMX-233 chip nearly equal Pentium II-233 systems' performance. Two of the machines tested, the Dell Dimension XPS M233s and the Gateway 2000 G5-233, made quick work of the PC WorldBench tests with scores of 243 and 240 respectively. That means they're only 3 to 4 percent slower with business applications than the Gateway 2000 G6-233M, which is a Pentium II-233. In multimedia tests, the XPS M233s and the G5-233 were even closer to the performance of the Pentium II-233. Gateway 2000's $2687 Pentium MMX G5-233 costs $82 less than the company's Pentium II model.

If price is your top priority, Quantex's QP5/233 SM-3, shipping for only $2449, sounds awfully good—even as the slowest of the bunch, its PC WorldBench score of 236 tops nearly all PCs tested until two months ago. For example, the average score for Pentium-200 MMX PCs is 231.

### PENTIUM II-233: HARD TO JUSTIFY COST

THE PENTIUM II-233 systems we tested from AST, Gateway 2000, and Quantex showed just slight differences in performance—PC WorldBench scores ranged from AST's 244 to the Gateway 2000's 251. The average PC WorldBench score of 247 for a Pentium II-233 exceeds the Pentium Pro-200 average of 228 by about 8 percent, and the Pentium-200 average of 214 by 15 percent.

All three Pentium II-233 systems offer 32MB of RAM, 512K secondary cache, Universal Serial Bus ports, and 12X/16X CD-ROM drives. These "16max" drives work at 16X speed on the outer portion of a CD-ROM disc but at 12X speed on the inner parts.

Among the Pentium II-233 machines, the Gateway 2000 G6-233M offers the best combination of performance and price, at $2769 with a 17-inch monitor. (The Quantex QP6/233 SM-3, $2799 with 17-inch monitor, is quite similar.) For $2499, Gateway 2000 has another model without the 16-bit wavetable sound, speakers, or Telepath 56K modem. It offers a richer configuration than the AST Bravo LC 6233, which costs $2499 with a 15-inch monitor, or $2700 with a 17-inch monitor. The AST's 2.1GB hard drive is the smallest, and its graphics accelerator has the least amount of video memory, 2MB. This is offset, however, by AST's fast video chip set, integrated on its motherboard; it even outpaced the Pentium II-266 average for our Macromedia Director test.

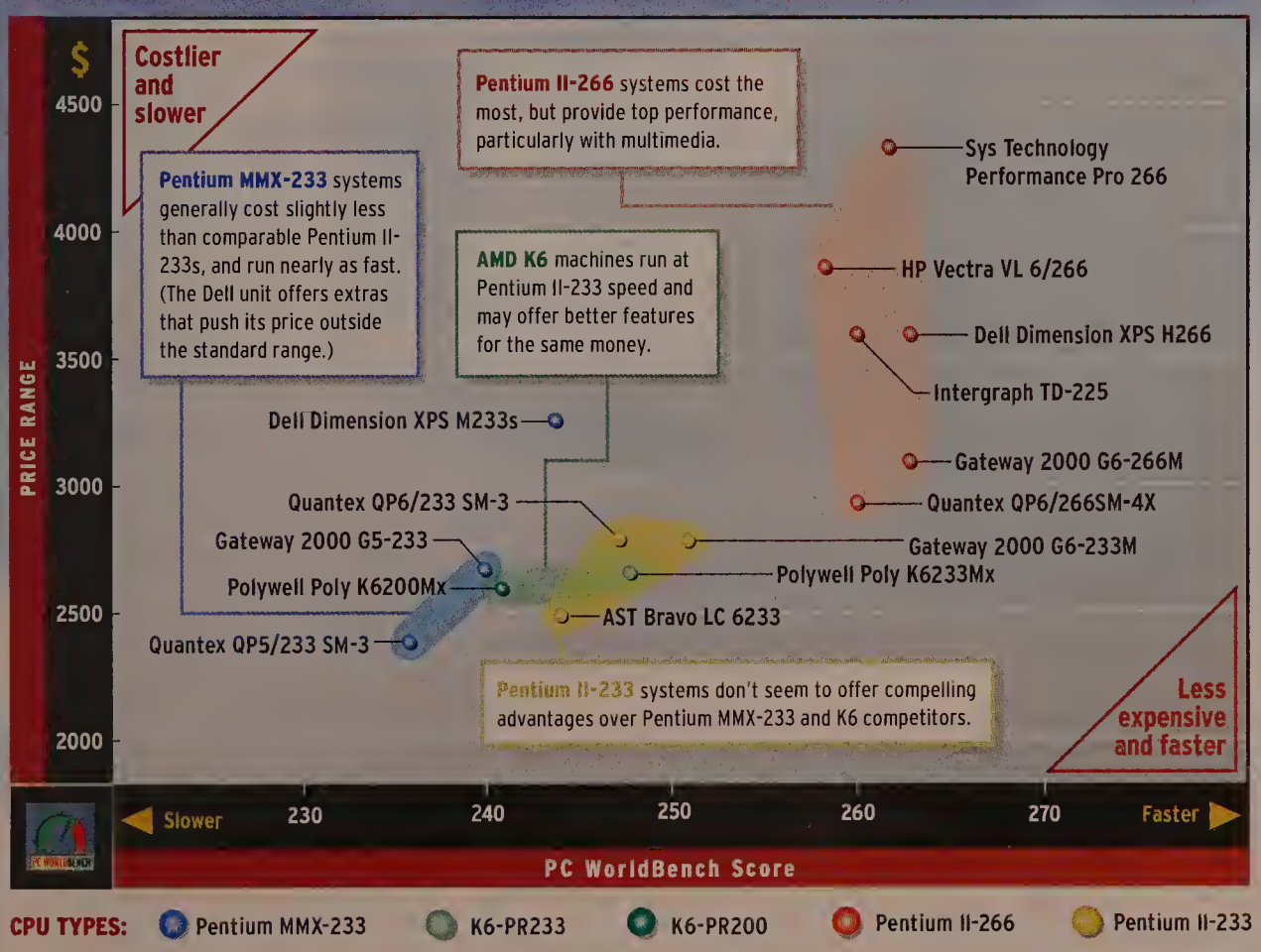
But overall, these Pentium II-233 PCs perform so much like less-expensive Pentium MMX-233 systems we tested that you may not be able to justify the small extra cost.

### PENTIUM MMX-233: STRONG CONTENDER

THE PENTIUM II-233 systems did better than the Pentium MMX-233 systems—but only by a small margin in many cases, even in multimedia tests. For example, the Pentium II-233 and the Pentium MMX-233 systems took ▶

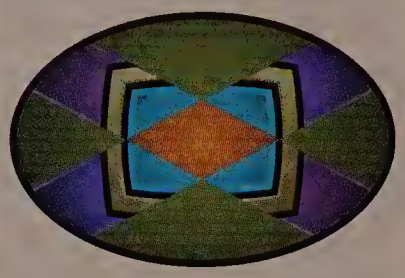
## System Shopping: Consider the Best Price/Performance Combination

CONFUSED by the dizzying proliferation of new chips appearing in today's PCs? Many systems are quite close in performance and price, so less-expensive PCs may not be much of a compromise. This chart shows performance for business applications; bear in mind that the Pentium II-266 enjoys a greater advantage in multimedia applications.




## Iomega Recalls Some Jaz Cartridges

IOMEGA IS RECALLING roughly 75,000 Jaz disk cartridges due to a faulty component that could cause eventual performance problems and data loss. To tell if a disk cartridge is affected, check the date and manufacturing code etched toward the center of the disk above the inscription "(c) Iomega 1995 patents pending." If the date falls within the period March 13, 1997 (03 13 97) to April 20, 1997 (04 20 97), *and* if the letters and numbers below the date end with "MS," you should replace the disk. The company estimates the problem affects 20,000 disks in the United States and 55,000 abroad. To return a disk, call Iomega at 800/336-1314. Replacement disks will be mailed along with a postage-paid return envelope to return the recalled disk.



## Online Services Settle With FTC

AMERICA ONLINE, CompuServe, and Prodigy have agreed to settle allegations by the Federal Trade Commission that the online services' "free trial" offers resulted in unexpected fees and withdrawals from consumers' debit accounts. The proposed settlements, announced by the FTC in May, may involve refunds and are open to comment until late June. The FTC will decide final terms soon afterward. To obtain updates and more information, call 202/326-2710, or visit the FTC's Web site at www.ftc.gov/opa/9705/online.htm. ▶

## STRONG OPTIONS FOR AFFORDABLE SYSTEMS

| | SYSTEMS | Price [1] | Drive type/ size (GB) | Graphics board | Modem (kbps) | Warranty for parts/labor (years) | Reader service number |
|---|---|---|---|---|---|---|---|
| PENTIUM II-233 | AST Bravo LC 6233<br>800/876-4278 www.ast.com | $2700 | EIDE/2 | 2MB S3 Virge/DX [2] | – | 1/1 | 782 |
| PENTIUM II-233 | Gateway 2000 G6-233M<br>800/846-2000 www.gw2k.com | $2769 | EIDE/3.2 | 4MB STB Virge/GX | 56 [3] | 3/3 | 783 |
| PENTIUM II-233 | Quantex QP6/233 SM-3<br>800/896-4898 www.quantex.com | $2799 | EIDE/4 | 4MB Matrox Millennium II | 33.6 | 3/1 | 784 |
| PENTIUM MMX-233 | Dell Dimension XPS M233s<br>800/388-8542 www.dell.com | $3229 [4] | IDE/6.4 | 8MB Matrox Millennium II | 33.6 | 3/1 | 785 |
| PENTIUM MMX-233 | Gateway 2000 G5-233<br>800/846-2000 www.gw2k.com | $2687 | EIDE/3.2 | 4MB STB Virge/GX | 56 [3] | 3/3 | 786 |
| PENTIUM MMX-233 | Quantex QP5/233 SM-3<br>800/896-4898 www.quantex.com | $2449 | EIDE/4 | 4MB Matrox Millennium II | 33.6 | 3/1 | 787 |

[1] With 17-inch monitor, and 12X/16X CD-ROM drive; drives operate at 12X for inner portion, 16X for outer portion of disc.
[2] Integrated on motherboard.
[3] Uses x2 technology.
[4] With ACS290 speakers and AWE32 wavetable sound.

All products: 912

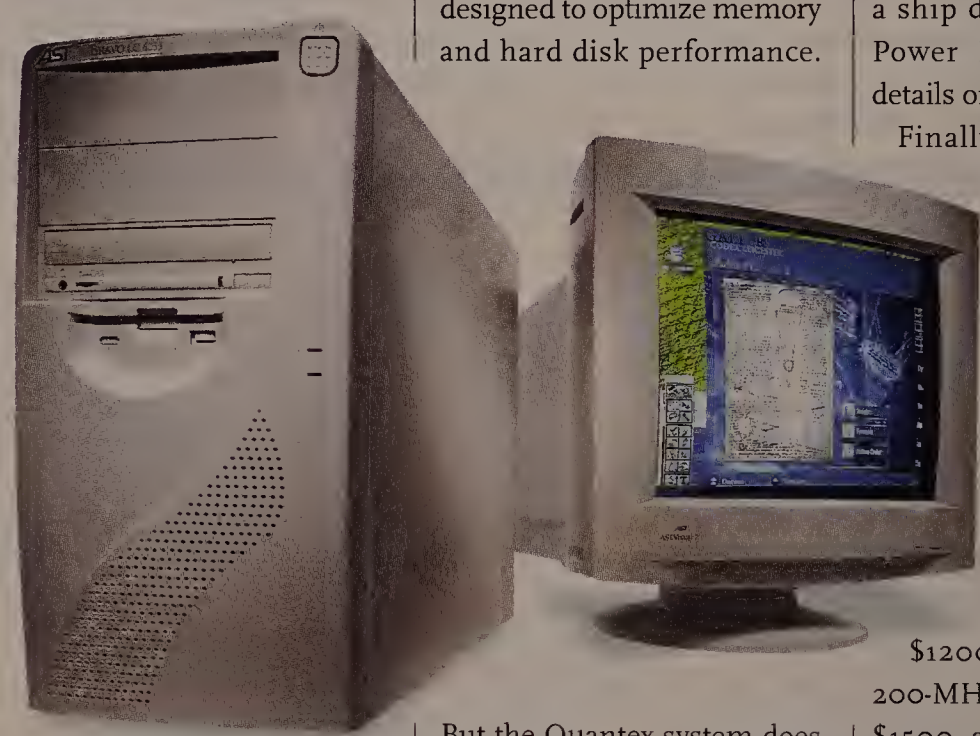
about the same time to perform our 3-D rendering tests. In our Photoshop image-editing testing, Gateway and Dell Pentium MMX-233 offerings nearly kept pace with the Pentium II-233–based units.

The fastest Pentium MMX-233 system, the Dell Dimension XPS M233s, logged a PC WorldBench score of 243—almost as fast as the AST Pentium II. This Dell system owes its speed in part to its Matrox Millennium II graphics accelerator with an unusually hefty 8MB of on-board video memory. It also uses a speedy IBM 6.4GB hard drive. But the Dell is pricey at $3229 with 17-inch monitor, though part of that price pays for extras like an internal Iomega Zip drive. (Without ACS290 speakers and AWE32 wavetable sound, the price drops to $3049.)

The Gateway 2000 G5-233, a Pentium MMX-233 system with 17-inch monitor, makes a more affordable choice at $2687—$82 less than its Pentium II-233 sibling. The G5-233 performed almost as well as the Dell, with a PC WorldBench score of 240.

Then there's the Quantex QP5/233 SM-3. This PC delivered the slowest performance of the three Pentium MMX-233 systems, with a PC WorldBench score of 236. But that's still not bad—only about 3 percent slower than the Dell on business apps. The Quantex also falls only slightly behind in video and rendering tests. In image editing tests the Quantex loses a large step—apparently hampered by a comparatively slower hard drive. Still, for buyers who don't need top-level multimedia speed, the $2449 Quantex is a great buy.

Ironically, the Quantex is the only Pentium MMX-233 PC we tested that incorporates Intel's new 430TX chip set, designed to optimize memory and hard disk performance. But the Quantex system does not use a hard drive that takes advantage of the 430 TX chip set. Pentium II machines use a different chip set.



**PENTIUM II-233 ON A BUDGET: AST's Bravo LC 6233.**

### MORE BUDGET OPTIONS

THERE'S ONE OTHER processor you should consider before buying a Pentium II-233 PC: The AMD K6-PR233. New 233-MHz K6 systems such as the Polywell Poly 500 MX8 offer performance at the Pentium II-233 level for less cash.

By the time you read this, Polywell should have shipped its Poly 500 MX8, based on the K6-233. At $2688, it costs $81 dollars less than Gateway 2000's Pentium II-233 G6-233M. The K6-233 runs a little slower in multimedia tasks. (AMD is also producing a 200-MHz version that is noticeably slower for multimedia.) K6 systems have also been announced by Everex, Micro Express, Robotech, and Sys Technology.

There's one hitch: While K6 systems are fast and affordable, at press time Digital was the only top-tier PC vendor that had announced it would use the processor, and the company had not announced a ship date. (See "The New Power Players," June, for details on K6 systems.)

Finally, if you'd prefer to spend less, there's one more option. As we went to press, Intel slashed prices on the plain Pentium chips. By the time this appears, many 120- and 133-MHz Pentium systems may sell for as little as $1200 to $1300; 166- and 200-MHz versions will sell for $1500, and $1600 to $1700, respectively.

But think hard before you buy one. If you need a very basic office system or a rock-bottom price on a home PC, these relative slowpokes make sense. But they will be outdated quickly—particularly for multimedia—as demands

PHOTOGRAPH: JOHN GREENLEIGH

from new MMX-tuned software increase.

If you need a sub-$2000 PC, you'll benefit from patience, says Linley Gwennap, editor of *The Microprocessor Report*. Over the next few months, prices on Pentium MMX systems will continue to fall.

The Pentium MMX-233 may be the last Pentium MMX chip, Gwennap says. Intel is turning its attention to the Pentium II for both the corporate and home markets.

Is there any reason to avoid a Pentium MMX-233? None that we can see. There are just two issues to note. First, the Pentium II chip has a faster secondary cache. That cache can speed up work in applications that often store large data sets in cache, such as spreadsheet programs. It could also help for software that caches frequently. That seems like a bonus for the P-II systems, but our tests show that systems based on the two processors perform nearly the same.

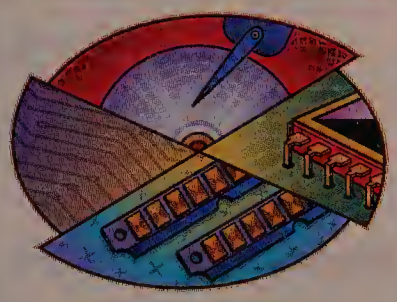
**If you need a sub-$2000 PC, you'll benefit from patience as Pentium MMX system prices continue to fall.**

Second, Intel has not announced whether it will offer an upgrade chip akin to the OverDrive for earlier Pentiums. Indeed, Intel has not detailed an upgrade path for Pentium II, and you won't see any upgrades before 1998, says Gwennap. And given the rapid decline in system prices and the concurrent advance in peripherals technology, it's not clear that any CPU upgrade will work for most buyers.

Not quite ready to choose? The first systems with Cyrix's new M2 chip will arrive soon. They should compete closely in performance and price with K6, Pentium II-233, and Pentium MMX-233 systems. Sorting out this pack of processors takes time, but means strong choices for consumers.

If you want an eminently affordable, fast PC, K6 and Pentium MMX-233 systems are hard to beat. Paradoxically, the fastest systems in this roundup—the Pentium II-233s—are neither fish nor fowl. They're not enough faster than their competitors to justify the extra cost. For top multimedia performance, skip Pentium II-233 and spend slightly more for systems based on its more powerful 266-MHz sibling. In any case, with so many sweet spots in the systems market, you're bound to find a good deal.

—*Laurianne McLaughlin* ▶

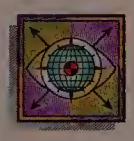


## TidBytes

**CHEAP INTERNET TV:** WorldGate Communications says it will soon release an affordable Web TV service that works with a standard TV and a cable converter. It is expected to add $4.95 to your monthly cable bill for e-mail capability and 3 hours of Internet access. **DIGITAL INSIDE?** Digital and Cyrix each filed lawsuits in May accusing Intel of patent infringement. Digital alleges that Intel copied technologies used in Digital's Alpha processor line. Digital has tried to block shipments of PCs based on Intel processors, but analysts doubt this will happen in the course of the legal fight.

WEB BROWSER

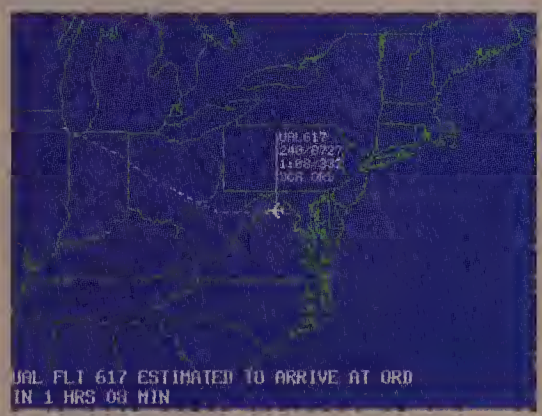
# Use the Web to Reduce Travel Trauma



LIKE A CAB RIDE through Mexico City, frequent business travel can be exhausting, daunting, and risky. A little research on the Internet can prevent some nasty surprises.

If you plan to travel outside the United States, start with a visit to the Department of State's home page (www.state.gov). The Travel Warnings/Consular Info section discusses current security hazards. For example, due to the number of violent taxi robberies in Mexico City, at press time this section included a warning from the U.S. Embassy in Mexico City advising Americans to use only taxis from authorized taxi stands (CTO). Site information also includes passport, visa, and vaccination requirements, and health risks associated with particular countries. There's even a downloadable form if you need to renew your passport. Unfortunately, you'll have to print it out and mail it in.

Tips and travel bargains abound on the Epicurious Travel Web site (travel.epicurious.com). The Terminally Hip feature can save time and confusion when visiting unfamiliar airports. Enlargeable terminal maps are available for more than 100 domestic airports, plus listings of distances to downtown areas. You'll also find bus, rail, and taxi information, including fares and schedules. And this site can save you money if you book your own travel: It lists discounts of up to 70 percent on airlines, hotels, and car rentals. At press time, an economy round-trip ticket from New York to Paris was offered for $288—nearly half the cheapest rate we could find through an agent. The site also lets you participate in airline fare auctions, which can provide significant savings. Caveat emptor: "Deal searching" requires a lot of surfing and, occasionally, submitting your name and address to unsecured e-mail databases.




**BIZTRAVEL'S IN-FLIGHT TRACKING offers real-time details on flights in progress.**

Biztravel.com (www.biztravel.com) provides In-Flight Tracking, a unique feature that lets you check the progress of any domestic flight. Here's how it works: Enter the airline, flight number, and destination. Presto! You see a map of the United States, with a superimposed aircraft icon plus tags indicating aircraft type and estimated time of arrival.

—*Randy Legge*

# The Airborne Office: Modems, Power Connections Fall Short of Claims

CONSUMER ALERT

EVER SINCE in-flight phones began supporting modems several years ago, the promise of airborne computing—fueled by slick advertising—has tempted the business traveler. That temptation is about to become irresistible as airlines launch electrical service that can power a notebook indefinitely. Has the in-flight office finally arrived?

That depends on your definition of an office. If money is no object, the ability to operate your notebook without batteries worth some aggravation, and sporadic access to e-mail acceptable, then the answer is yes. Otherwise, the office in the sky remains pie in the sky.

**INCONVENIENT CONVENIENCE:** Airlines plan to provide electrical outlets, but airborne computing comes up short.

## PRICEY POWER

THE NEW ELECTRICAL service will not be widely available for some time. Currently, Primex Aerospace's EmPower is the only in-flight power system certified by the Federal Aviation Administration. EmPower is being rolled out by American, Delta, United, and several other carriers. The service will appear first in business and first-class on planes used for long flights. Primex expects EmPower to appear in 300 planes by year-end.

Plugging into an EmPower socket requires a special adapter similar to those used to draw power from car cigarette lighters. But you will need a special connector designed for your brand and model to plug into an EmPower socket. Currently, Absolute Battery, Lind Electronics, Universal Sources, and Xtend Micro Products make adapters. Prices range from $70 to $99.

In some cases, you may not need to buy an adapter. If you're traveling on American and already own an adapter that can be plugged into a cigarette lighter, you're all set.

EmPower's current monopoly on in-flight electrical service may not last long. At least two other service providers are likely to obtain certification within the next year, says FAA engineer Jon Dimtroff. But it's unlikely that these fledgling services will require proprietary adapters.

## SNAIL E-MAIL

IN-FLIGHT PHONES have been around for over a decade. Service is available from market leader GTE Airfone or from AT&T Wireless Services. But modem support from these vendors is only a few years old, and immaturity shows.

These phones do not support all PC Card modems, and it's tricky to determine if your particular device will work. The only way to confirm that you're airplane-ready—before being airborne—is to ask your PC Card vendor or in-flight service providers to check on your specific model.

Even if you make a connection, premature cutoffs are too common and performance is slow. GTE supports speeds of up to only 2400 bits per second; AT&T tops out at 4800 bps.

*PC World* editors conducted informal tests with both services and concluded that sending and receiving e-mail was not worth the time and expense. We made nearly two dozen attempts on three airlines during a variety of domestic flights. We were successful about one-third of the time. Moreover, the slow connection speeds didn't cut it.

Perhaps the biggest drawback to in-flight calls is the astronomical pricing: At press time, GTE Airfone charged $2.99 to connect and $3.28 per minute for calls within the continental United States, while AT&T Wireless cost $2.99 to connect and $2.99 a minute for domestic calls.

Until in-flight electrical and communications services get up to speed, the airborne office will be the domain of those willing to pay for the convenience of computing in the wild blue yonder.

—*Yardena Arar* ▶

**Absolute Battery**
800/829-8294, www.absbatt.com
READER SERVICE NO. 775

**Lind Electronics**
800/697-3702,
www.lindelectronics.com
READER SERVICE NO. 776

**Universal Sources**
800/439-3214
READER SERVICE NO. 777

**Xtend Micro Products**
800/232-9836, www.xmpi.com
READER SERVICE NO. 778

PHOTOGRAPHS: JOHN ABBOTT

# *Get it your way.* RIGHT AWAY.

**QUIN-55** (Pentium® processor & Pentium® processor with MMX™ technology based PCs)

**APRI-31/32** (Single/Dual Pentium® Pro processor based PCs)

**APRI-74** (Pentium® II processor based workstations/servers)

**DTN-5M** (Pentium® processor with MMX™ technology based notebooks)

You're savvy about PC systems. You know what you need and what you want. And our line of award winning QUIN-55 PCs offers you a world of networking choices. Our economical NetPC desktop system can help reduce your total cost of ownership as well as the complexity of managing your PC environment. It includes a 133MHz Pentium® processor and runs Microsoft® Windows® operating systems. Need more power? Our cost efficient workstations/servers are available with a 200MHz Pentium® processor, 200MHz single or dual Pentium® Pro processor, or a 266MHz Pentium® II processor to run Windows NT™. Client presentations? Consider our budget-friendly line of DTN-5M notebooks that feature a 150MHz or 166MHz Pentium® processor with MMX™ technology.

Best of all. These systems can be custom configured to the way you work. From components to peripherals, you name it, we'll do it. Your way. To discover the DTK price/performance difference, contact your reseller. Or call 1-800-BUY-A-DTK (1-800-289-2385).

dtk®

**DTK Computer**

*www.dtkcomputer.com*

intel inside pentium® PROCESSOR

MMX™ intel inside pentium® II PROCESSOR

The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corp. Windows is a registered trademark of Microsoft Corp. © 1997 DTK Computer Inc. All rights reserved.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Boston 617/932-3800 | New York 908/562-8800 | Washington, D.C. 703/222-9194 | Atlanta 770/279-1385 | Tampa 813/885-2668 | Miami 305/597-8888 | Pittsburgh 412/373-6750 | Cleveland 216/349-1995 | Chicago 847/593-3080 |
| Indianapolis 317/872-8850 | Milwaukee 414/679-7870 | Minneapolis 612/557-1973 | Kansas City 913/492-3800 | Dallas 972/484-8535 | Houston 281/568-6688 | Scottsdale 602/451-6774 | Los Angeles 818/810-0098 | |

Circle 84 on reader service card

# Windows 97 Software Suites: No Fix for Speed Freaks

WHEN IT comes to performance, we've never had anything good to say about Windows 95 business software suites. The last time we tested the suites (see "Software Suites: Corel Takes On Microsoft and Lotus," September), we called Corel's WordPerfect Suite 7 "mediocre" and described the Lotus SmartSuite 96 version of Word Pro as "molasseslike." Microsoft Office 95 was the fastest suite but "that's not saying much," we complained. In our March issue ("Lotus SmartSuite 97: Now Smart Enough?"), a preproduction version seemed faster than its predecessor.

## BAD NEWS

WE'VE NOW tested shipping versions of Lotus SmartSuite 97 and Microsoft Office 97 along with earlier versions SmartSuite 96 and Office 95—and not very much has changed. SmartSuite 97 was about 6 percent faster overall than SmartSuite 96, mainly because of 1-2-3 release 97's glacial printing performance. Office 97 was actually 12 percent slower than Office 95 in our tests. Moreover, Office 95 held on to first place, but not by much. We couldn't formally test Corel's new WordPerfect Suite 8 because a shipping version wasn't available at press time. We did examine a preproduction version of the suite; see "WordPerfect Suite Tightens Integration, Improves Web Features."

The news isn't all bad. The newest versions of several Lotus and Microsoft applications were considerably faster than their predecessors. In addition, the performance of old and new suites improved an average of two to three times going from a Pentium-90 system with 16MB of RAM to a Pentium MMX-200 system sporting 32MB of RAM. The newer suites improved the most on the faster systems. This is good news if you plan to buy a new PC—the newest version of your suite will make the most of all that power.

How much weight should you give performance in the upgrade equation? It depends on which apps you use frequently. But if a suite doesn't provide the features that you need, speed is meaningless.

If you're unhappy with the performance of your current suite and contemplating an upgrade, you need to weigh all the options. Sure, a shiny new Pentium MMX-200 or Pentium II system will speed up your applications, but can you spare $2000 to $3000?

Adding 16MB of RAM to a 16MB computer will run about $80 to $100 and will no doubt improve the performance of any suite. By comparison, the SmartSuite 97 upgrade carries a street price of $150; the Microsoft Office Professional Edition, which includes Access 97, is available for about $350.

Overall, **performance differences** between the new and old suites **don't justify upgrading.** To speed things up, consider more RAM or a faster PC.

## UPS AND DOWNS OF PERFORMANCE

WE TESTED the main applications in each suite on a Pentium-90 and a Pentium MMX-200 test system. The PC World Test Center revamped the tests used in our September performance story, adding nine new tests including eight specifically designed for Windows 95 databases. We beefed up previously used tests for common tasks like launching applications, opening files, and printing—one of the most time-consuming tasks. This drastically affected the results for spreadsheets and presentation graphics.

For spreadsheets, graphics and databases, we defined printing as the time it took an application to fully process a file and then allow us to continue working unimpeded. In September our tests measured only when an application returned control of the cursor. For example, Office 95's PowerPoint 7.0 scored exceptionally well in September—but even though the application returns your cursor, you can't get much work done because the application is still processing the file to be printed. In our latest tests, we included processing time. As a result, PowerPoint 7.0 fell behind Lotus Freelance versions 96 and 97.

We also calculated scores without printing times to reflect an application's actual performance. Here's an overview of our results. ▶

ILLUSTRATIONS: HANK OSUNA

# BREAKTHROUGH!

## Fix-It™ is the easiest way to find and fix Windows problems. Guaranteed!

Quarterdeck Fix-It is the breakthrough you need to solve system problems, conflicts and errors in Windows 95. And unlike Cybermedia's First Aid, Fix-It has a knowledge base of over 1,000 applications and superior emergency recovery. Get the power to help end the frustration of Windows 95 problems today!

### Windows 95 - what a mess!

Every new program and peripheral adds new potential problems to your Windows 95 system. Software conflicts and hardware configuration errors can crash your PC in seconds. Botched installations or sloppy uninstalls can cause havoc and slow your system down. Most diagnostic utilities won't even catch many of these problems. They only analyze your hardware devices, or a limited number of applications.

But Fix-It can prevent software conflicts and configuration errors in hundreds of applications and hardware devices before they stop you!

### Fix-It solves the problem

Fix-It starts with an automatic, comprehensive scan of your entire system – applications, the Windows 95 registry, configuration files, devices and drivers. It analyzes everything you're using against its extensive application knowledge base of over 1,000 Windows 95, 3.x and DOS applications. Then it fixes problems before they put you in a fix.

The *Preinstallation Inspector* finds potential conflicts in new applications before you install them. And, *Crash Defender* automatically intercepts crashes to give you the best chance to save your data.

See what a breakthrough Fix-It is today. To learn more, call the toll-free number below, visit your local retailer, or visit **www.quarterdeck.com** and download a **FREE TRIAL**.

**TRY FIX-IT™ RISK-FREE**
**ONLY $29.95**
**CALL 1-800-683-6696**

Call now and we'll rush you Fix-It for $29.95 plus shipping and handling. If you're not 100% satisfied, return it within 30 days for a full refund. Not valid with any other offer. Hurry, this is a limited time offer.

Call 1-800-225-8148 for volume licensing prices.

Offer Expires 9/30/97 Offer Code 01306

QUARTERDECK

©1997 Quarterdeck Corporation. All rights reserved. 13160 Mindanao Way, Marina del Rey, CA 90292 Quarterdeck is a registered trademark. Fix-It and the Quarterdeck "Q" symbol are trademarks of Quarterdeck Corporation or its subsidiaries. All other products are trademarks or registered trademarks of their respective holders.

**Circle 189 on reader service card**

**Word Processing: Word Pro improves.** The award for the most improved word processor goes to Word Pro 97. Overall, it was almost twice as fast as Word Pro 96, with the most notable improvements in application launching and document loading. By contrast, Word 97 was nearly 25 percent slower than Word 95. When all word processing applications were run on our Pentium MMX-200, performance increased across the board, from 38 percent for Word 95 to more than 70 percent for each of the other three word processors.

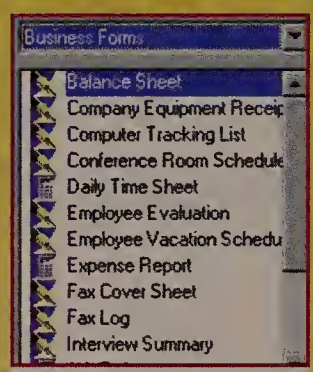
The upshot is that if you use Word Pro 96, you should consider upgrading to SmartSuite 97. You'll get a raft of new features, plus a performance boost. Microsoft Word users looking for a boost in performance won't find much in Word 97, so ▶

## WordPerfect Suite Tightens Integration, Improves Web Features

WHEN COREL shipped WordPerfect Suite 7 last May, the vendor made an offer that many people couldn't refuse but may wish they had. Corel packed eight applications plus utilities, clip art, and fonts into a suite with the lowball price of $99. The problem was, many of the applications were poorly integrated, slow, and lacked collaboration tools. We examined a preproduction version of Corel's latest offering, WordPerfect Suite 8—and much has changed, for the better. The new suite is more tightly integrated and features improved Web publishing and new group editing tools. In informal tests, the new suite seems faster than its predecessor.

### Different Ingredients

COREL JETTISONED Sidekick, Dashboard, and many other utilities found in WordPerfect Suite 7. Suite 8 offers a more thoughtful collection of complementary software. The suite still includes the latest versions of old standbys WordPerfect, Quattro Pro, and Presentations, plus Netscape Navigator 3.0 as well as fonts and clip art. Corel added Corel PhotoHouse, an image editing tool. CorelCentral, which combines calendaring, scheduling, to-do lists, and contact management, replaces InfoCentral, WordPerfect's powerful but complex personal information manager. CorelCentral was unavailable for preview and will not be shipping with the initial release of WordPerfect Suite 8 in June. Wordperfect Suite 8 costs more than Suite 7, with a $299 street price and competitive upgrade price of $149, although users will find a $20 rebate card in the box.



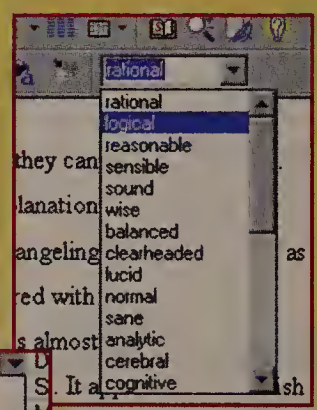

THE COREL PERFECT-EXPERT makes document creation a snap by providing a number of templates.

### Application Integration

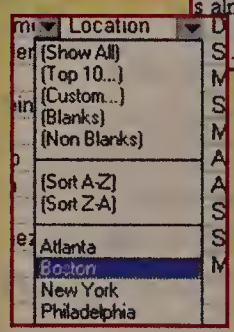
WORDPERFECT, Quattro Pro, and Presentations now share identical menu structures, similar dialog boxes, and an Application Bar that sits at the bottom of the screen. Much like the Windows 95 Taskbar, the Application Bar lets you switch easily between open documents as well as drag and drop data between them. PerfectExpert, WordPerfect's integrated help system, is also supported by each of the suite's major applications, a feature that still can't be found in Lotus SmartSuite.

WordPerfect Suite 8 includes group collaboration tools as well. The Version Controls feature, available in WordPerfect, Quattro Pro, and Presentations, lets you save multiple versions of a document in a single file. This makes it easy to switch between different versions of the document for review. But Corel's tools are not as powerful as those found in Lotus's SmartSuite.

The Internet publishing features have been improved in WordPerfect, Quattro Pro, and Presentations; they now include enhanced support for tables and frames. A new QuickLinks feature automatically converts Web addresses to hypertext links and also lets you embed links to other documents in your directories.




WORDPERFECT SUITE 8's Prompt-As-You-Go feature puts a thesaurus on screen at all times.




QUATTRO PRO'S QuickFilter command lets you quickly filter information from database tables.

On the application front, Corel has added some unique features to catch up with Lotus and Microsoft.

WordPerfect's Prompt-As-You-Go feature displays a list of alternative words from the Thesaurus as you type. New desktop publishing tools, such as multiple drawing layers, bring WordPerfect closer to Microsoft Word's capabilities. Quattro Pro includes a QuickFilter command, comparable to Excel's AutoFilter, that lets you quickly filter data from database tables. Presentations offers over 120 transition effects, plus a number of new backgrounds and predefined layouts.

### A Definite Upgrade

OVERALL, WordPerfect Suite 8 is a significant improvement over its predecessor. If you haven't upgraded to a Windows 95 version of the WordPerfect Suite, now may be the time. If you moved to WordPerfect Suite 7 and were disappointed by the lack of integration and poor performance, Suite 8 offers a compelling reason to upgrade again. However, if WordPerfect 7 currently meets your needs, the $149 investment is probably not worthwhile.

—Cathy Kenny

• Corel WordPerfect Suite 8
Street price: $299, upgrade $149
Corel Corp., 800/772-6735
www.corel.com

READER SERVICE NO. 779

QUARTERDECK

# IT CAN REMOVE TIRED OLD PROGRAMS EVEN BEFORE THEY'RE WRITTEN.

## (TOO BAD WE DON'T MAKE A VERSION FOR TV.)

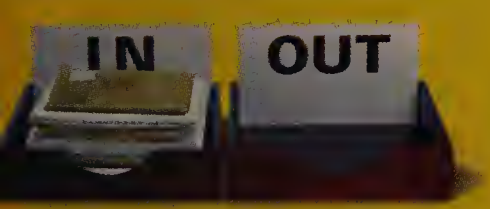
New CleanSweep® 3 from Quarterdeck is so uniquely thorough, it can remove unwanted files and programs that won't even be on your PC for years.

Because with Update-It,™ CleanSweep is the only removal utility that can regularly and automatically update itself over the Internet. So right off, it has the ability to dispose of unnecessary files generated by programs that haven't even been written yet.

Of course, it can surely tidy up those that have.

Designed for Microsoft® Windows NT® Windows 95

It already runs on Windows NT and Windows 95, and it comes with an application knowledge base of over 1,000 popular 16- and 32-bit programs. The same programs that spew debris all over the place every time you install them, or even when you download a file. Debris such as redundant DLLs, invalid registry entries, duplicate files and orphan files.




*The law of personal computers: What goes in usually just stays there.*

All in all, pretty messy stuff.

Eventually the inside of your computer resembles the inside of your closet, and you begin to wonder where all that valuable hard disk space went.

That's where CleanSweep's automated wizards come in.

With the determination of bloodhounds, they quickly locate the junk and either remove it automatically or, if you prefer, let you do it yourself. Furthermore, files you don't want deleted won't be. Our exclusive Safety Sweep™ provides the best protection available against accidental file deletion. It even automatically compresses and backs up the files it removes.

*CleanSweep 3 keeps your hard drive from getting stopped up.*

We may not know what tomorrow's software will look like, but we do know this – it won't be pretty.

So install CleanSweep, the only removal utility that can safely and successfully get rid of unnecessary files for years and years to come.

Get your own copy by visiting your nearest store today. Or call us at (800) 683-6696, code 01111, or pay us a visit at www.quarterdeck.com.

**Circle 185 on reader service card**

©1996 Quarterdeck Corporation. All rights reserved 13160 Mindanao Way, Marina del Rey, CA 90292. Quarterdeck and CleanSweep are registered trademarks of Quarterdeck Corporation. Update-It, Safety Sweep and the Quarterdeck "Q" symbol are trademarks of Quarterdeck Corporation. All other products are trademarks of their respective holders.

## Office Suites: Sluggish as Usual on Pentium-90

### NEWER MAY NOT BE FASTER

| SUITE | Word processor | Spreadsheet | Database | Presentation graphics | Total time | Overall score |
|---|---|---|---|---|---|---|
| Microsoft Office 95 | :25 | 2:51 | 1:41 | 4:18 | 9:15 | 100 |
| Lotus SmartSuite 97 | :25 | 9:36 | 1:46 | :49 | 12:36 | 90 |
| Microsoft Office 97 | :33 | 2:44 | 2:15 | 2:26 | 7:58 | 88 |
| Lotus SmartSuite 96 | :46 | 3:24 | 1:48 | :55 | 6:53 | 85 |

Minutes 0 2 | 0 2 4 6 8 | 0 2 | 0 2 4

Application test times in minutes; lower numbers are better. Includes printing. For overall score, higher numbers are better.

### WITHOUT PRINTING, VAST IMPROVEMENTS

| SUITE | Word processor | Spreadsheet | Database | Presentation graphics | Total time | Overall score |
|---|---|---|---|---|---|---|
| Microsoft Office 95 | :25 | :23 | 1:06 | :21 | 2:15 | 100 |
| Lotus SmartSuite 97 | :22 | 1:17 | 1:00 | :19 | 2:58 | 86 |
| Lotus SmartSuite 96 | :40 | :31 | 1:02 | :22 | 2:35 | 78 |
| Microsoft Office 97 | :33 | :42 | 1:44 | :37 | 3:36 | 65 |

Minutes 0 1 | 0 1 | 0 1 | 0 1

Application test times in minutes; lower numbers are better. Does not includes printing. For overall score, higher numbers are better.

### How We Test

HAND-TIMED TESTS were conducted on a Micron Millennia Pentium-90 with 16MB of RAM, 256K secondary cache, a 2.5GB hard disk, and a Diamond Stealth64 graphics controller with 2MB of RAM; and on an NEC Ready 9716 Pentium MMX-200 with 32MB of RAM, 256K secondary cache, a 3.2GB IDE hard disk, and an integrated graphics controller with 2MB of RAM. An overall score is a sum of the normalized and weighted time each suite's applications took to complete their respective tasks: word processing (40 percent), spreadsheet (30 percent), database (15 percent), and presentation graphics (15 percent). The best-performing suite is assigned an overall score of 100.

**Word processing:** We launched the application, and performed various tasks, such as loading a 40-page native document, importing a file, inserting a graphic, performing a search and replace, linking a spreadsheet, and printing.

**Spreadsheet:** We launched the application, opened a 27-column-by-8192-row spreadsheet, changed a cell value, recalculated, created a chart, saved the workbook, and printed it.

**Database:** We launched the application, opened a 45,000-record table, filtered the table for a 24,000-record subset, performed a linked query, generated a report, and printed it.

**Presentation graphics:** We launched the application, loaded a 45-slide presentation, imported graphics, imported a linked spreadsheet, saved the presentation, and printed it.

Data based on tests performed by the PC World Test Center. All rights reserved.

the upgrade decision will depend on other factors.

**Spreadsheets: SmartSuite moves backwards.** 1-2-3 97 was the big loser in our spreadsheet tests—its abysmal performance was the main reason that SmartSuite 97 didn't take first place. In five out of six tests, 1-2-3 release 97 was slower than its 16-bit predecessor, 1-2-3 release 5.01, when running on the P-90. The recalculation test was the only one in which 1-2-3 release 97 equaled the speed of its predecessor, or of Excel 95 and Excel 97 for that matter.

Other spreadsheet tasks such as creating a chart and saving the worksheet saw a decrease in performance from 1-2-3 release 5.01 to 1-2-3 release 97. Creating a chart in 1-2-3 release 5.01 took just 2 seconds, but generating that same chart in 1-2-3 release 97 took over 30 seconds. However, we saw significant improvement when running the same test on the Pentium MMX-200.

1-2-3 release 97's biggest problem, however, was in printing. It took more than 8 minutes to print our sample worksheet. In contrast, release 5.01 only took a little under 3 minutes to print the same worksheet. There was considerable improvement on the Pentium MMX-200: 1-2-3 release 97 completed the printing tasks in just under 3 minutes, and 1-2-3 release 5.01 finished in about 1 minute and 15 seconds. Lotus attributes the spreadsheet's poor performance to the fact that 1-2-3 release 97 uses Windows 95 printer drivers rather than relying on its own optimized printer drivers, as it had done in the past. Lotus said it plans to address the printing problem, possibly with a patch or download, later this year. If you plan to upgrade to 1-2-3 release 97 for its impressive set of new features and you print a lot of large, complicated spreadsheets, you'll want to consider upgrading your hardware.

Excel 97 was slightly faster than Excel 95 overall. Excel 97's printing was 20 percent faster on a Pentium-90 than Excel 95—but the fact that it took a little over 2 minutes to complete the printing test is something to consider if you print a lot of worksheets. On the P-90, Excel 95 was more than twice as fast as Excel 97 in opening the test worksheet, and tasks such as creating a chart and saving a worksheet file were also faster in Excel 95.

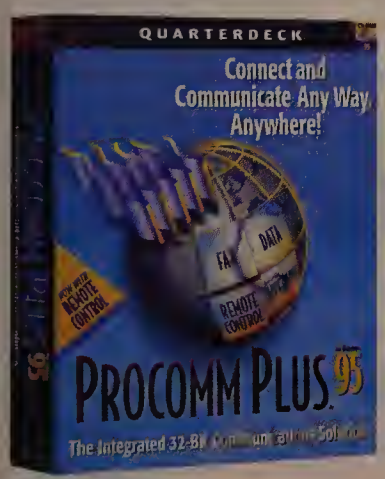
On the Pentium MMX-200 system, both versions of Excel improved considerably. Excel 95 on a Pentium MMX-200 ran over two and a half times as fast as it did on the P-90, while Excel 97 nearly tripled its speed on the faster system. Although Excel 97 fared much better than 1-2-3 release 97 in printing, these results show that both programs leave a lot to be desired in the printing department. If you want ▶

# Great. Just when we'd perfected communications software for *this* planet.

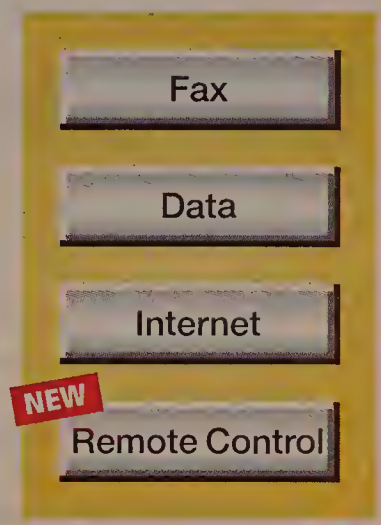
We thought we had it all figured out. After all, our new Procomm Plus® for Windows 95 can connect you to virtually anyone, anywhere on this planet.

Especially now that we've integrated secure, fast remote control capabilities into the world's best-selling PC communications software. So you have quick, easy access to your files and applications wherever you are.

Our advanced fax features include OCR, annotation and scanner support for graphics and signatures. While our 36 terminal emulations help you link up to a wide variety of corporate host systems. We've also made life simple with access to the Internet via mail, a newsreader and state-of-the-art web browsing through the included Microsoft® Internet Explorer.




And we integrated it all with a Connection Directory that lets you fax, browse and transfer files without having to jump from one application to another or reconfigure your system settings every single time.




Basically, what we've created is the most advanced 32-bit multitasking communications package on earth. And for now, we'll just have to settle for that. To find out more call 1-800-282-0866, code 01718, visit your nearest store or come to www.quarterdeck.com.

QUARTERDECK.

© 1997 QATASTORM TECHNOLOGIES, INC., a subsidiary of Quarterdeck Corporation. All rights reserved worldwide. 13160 Mindanao Way, Marina del Rey, CA 90292. Quarterdeck is a registered trademark and the Quarterdeck "Q" symbol is a trademark of Quarterdeck Corporation. ProComm, Procomm Plus, the Procomm Plus "wavy line design" and QATASTORM are registered trademarks of QATASTORM TECHNOLOGIES INC., a subsidiary of Quarterdeck Corporation. All other trademarks and tradenames are properties of their respective owners.

**Circle 190 on reader service card**

## DELL DIMENSION DESKTOPS FOR BUSINESS

**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ Microsoft® Office 97 Small Business Edition ◆ MS® Windows® 95 ◆ MS Mouse (MS IntelliMouse on XPS System) ◆ 3 Year Limited Warranty† with 1 Year On-site^Δ Service **Upgrades:** ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $109. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ HP LaserJet 6Pse Printer, $799. ◆ 3-Pak of Zip 100MB Cartridges, add $39.

| ***NEW* DELL DIMENSION® XPS H266**<br>266MHz PENTIUM® II PROCESSOR | ***NEW* DELL DIMENSION XPS H266**<br>266MHz PENTIUM II PROCESSOR | ***NEW* DELL DIMENSION XPS M233s**<br>233MHz PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY | **DELL DIMENSION XPS M200s**<br>200MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY |
|---|---|---|---|
| Common features listed above plus:<br>• 64MB EDO Memory with ECC<br>• *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)<br>• 1000HS Trinitron® Monitor (15.9" v.i.s.)<br>• Matrox Millennium 4MB WRAM Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Integrated Yamaha 16-Bit Sound<br>• Altec ACS-290 Speakers w/Subwoofer<br>• Iomega Zip 100MB IDE Internal Drive with One Cartridge | Common features listed above plus:<br>• 32MB EDO Memory<br>• *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)<br>• *NEW* 1000LS Monitor (15.9" v.i.s.)<br>• Matrox Millennium 4MB WRAM Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Integrated Yamaha 16-Bit Sound<br>• Altec ACS-90 Speakers<br>• Iomega Zip 100MB IDE Internal Drive with One Cartridge | Common features listed above plus:<br>• 32MB SDRAM Memory<br>• 3.2GB Hard Drive (12ms)<br>• *NEW* 1000LS Monitor (15.9" v.i.s.)<br>• *NEW* 4MB EDO ViRGE 3D Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Sound Blaster 16 WaveSynth Wavetable Sound<br>• Altec ACS-90 Speakers<br>• Iomega Zip 100MB IDE Internal Drive with One Cartridge<br>★ *Upgrade to 64MB SDRAM, add $239.* | Common features listed above plus:<br>• 32MB SDRAM Memory<br>• 3.2GB Hard Drive (12ms)<br>• 800HS Trinitron Monitor (13.7" v.i.s.)<br>• *NEW* 4MB EDO ViRGE 3D Video Card<br>• 16X Variable EIDE CD-ROM Drive<br>• AWE32 Wavetable Upgrade Card<br>• Altec ACS-90 Speakers<br>★ *Upgrade to a 4.3GB Hard Drive (9.5ms), add $60.*<br>★ *Upgrade to a 1000LS Monitor (15.9" v.i.s.), add $119.* |
| **$3599**<br>Business Lease◊: $130/Mo.<br>Order Code #500609 | **$2999**<br>Business Lease: $111/Mo.<br>Order Code #500608 | **$2499**<br>Business Lease: $92/Mo.<br>Order Code #500607 | **$2199**<br>Business Lease: $81/Mo.<br>Order Code #500606 |

# ENGINEERS ASSURE US THESE SYSTEMS WILL

## DELL DIMENSION DESKTOPS FOR HOME

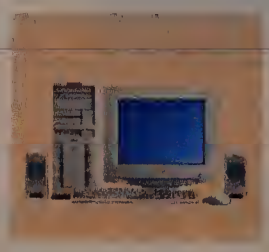
**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ 56K Capable* U.S. Robotics x2 Telephony Modem ◆ MS Home Essentials ◆ MS Windows 95 ◆ MS Mouse (MS IntelliMouse on XPS Systems) ◆ 3 Year Limited Warranty with 1 Year On-site Service
**Upgrades:** ◆ HP DeskJet 820Cse Color Printer, add $299. ◆ Iomega Zip 100MB IDE Internal Drive with One Cartridge, add $99. ◆ 3 yrs. On-site Service, add $99.

| ***NEW* DELL DIMENSION XPS H266**<br>266MHz PENTIUM II PROCESSOR | ***NEW* DELL DIMENSION XPS M233s**<br>233MHz PENTIUM PROCESSOR W/MMX | **DELL DIMENSION XPS M200s**<br>200MHz PENTIUM PROCESSOR W/MMX | **DELL DIMENSION M166a**<br>166MHz PENTIUM PROCESSOR W/MMX |
|---|---|---|---|
| Common features listed above plus:<br>• 64MB EDO Memory with ECC<br>• *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)<br>• 1000HS Trinitron Monitor (15.9" v.i.s.)<br>• *NEW* Matrox Millennium II 8MB WRAM Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Yamaha 32 Wavetable Sound<br>• Altec ACS-490 Full Dolby® Surround Sound Speakers with Subwoofer<br>• Iomega Zip 100MB IDE Internal Drive with One Cartridge | Common features listed above plus:<br>• 32MB SDRAM Memory<br>• *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)<br>• 1000HS Trinitron Monitor (15.9" v.i.s.)<br>• Matrox Millennium 4MB WRAM Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Sound Blaster 16 WaveSynth Wavetable Sound<br>• Altec ACS-290 Speakers with Subwoofer<br>★ *Upgrade to 64MB SDRAM, add $239.* | Common features listed above plus:<br>• 32MB SDRAM Memory<br>• 4.3GB Hard Drive (9.5ms)<br>• *NEW* 1000LS Monitor (15.9" v.i.s.)<br>• *NEW* 4MB EDO ViRGE 3D Video Card<br>• 16X Variable EIDE CD-ROM Drive<br>• Sound Blaster 16 WaveSynth Wavetable Sound<br>• Altec ACS-90 Speakers<br>★ *Upgrade to a 6.4GB Hard Drive with 512KB Cache (9.5ms), add $75.*<br>★ *Upgrade to Altec ACS-290 Speakers with Subwoofer, add $75* | Common features listed above plus:<br>• 16MB SDRAM Memory<br>• 2.1GB Hard Drive (12ms)<br>• 800HS Trinitron Monitor (13.7" v.i.s., .26dp)<br>• 2MB EDO ViRGE 3D Video<br>• 16X Variable EIDE CD-ROM Drive<br>• Sound Blaster 16 PnP Sound Card<br>• Altec ACS-90 Speakers<br>★ *Upgrade to 32MB SDRAM, add $119.*<br>★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.* |
| **$3899**<br>Order Code #500604 | **$2999**<br>Order Code #500603 | **$2399**<br>Order Code #500602 | **$1899**<br>Order Code #500601 |

**Thousands of other custom configurations**


†Non-discountable promotional pricing. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ★Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.


**GET FREE DELL NEWS, RIGHT AT YOUR DESKTOP!**
**With DirectNews, Dell's free priority email bulletin, you can get pricing, product announcements, and limited time offers emailed direct to your computer, as soon as they become available. This money and time saving bulletin is available exclusively by subscription. And it's easy to subscribe. Just email us at listserver@dell.com with the message "join ddn" And then watch your mailbox for the inside scoop on Dell's latest offers.**



**DELL DIMENSION M166a**
166MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:
- 16MB SDRAM Memory
- 2.1GB Hard Drive (12ms)
- 15LS Monitor (13.7" v.i.s.)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive

★ *Upgrade to 32MB SDRAM, add $119.*
★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*
★ *Upgrade to an 800HS Trinitron Monitor (13.7" v.i.s., .26dp), add $49.*

**$1699**

Business Lease: $63/Mo.
Order Code #500605

## DESKTOP SOFTWARE DESCRIPTIONS

**MS Office 97 Small Business Edition (SBE) includes:**
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

Plus your choice of Bookshelf or Encarta

**MS Home Essentials includes:**
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0

## *NEW* DELL POWEREDGE SERVERS

**Common features:** ◆ 512KB L2 Cache ◆ Integrated Ultra-Wide SCSI-3 Controller ◆ Intel® EtherExpress™ Pro/100 NIC ◆ Intel LANDesk® Server Manager v2.5x ◆ Dell Server Assistant CD ◆ 3 Year Limited Warranty†

**DELL® POWEREDGE® 2200 SERVER**
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 96MB ECC EDO Memory
- 4GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- MS Windows NT® Server 4.0

★ *Upgrade to a 9GB Ultra-Wide SCSI-3 Hard Drive, add $450.*
★ *Upgrade to 128MB ECC EDO Memory, add $220.*

**$4999**

Business Lease: $179/Mo.
Order Code #250072

**DELL POWEREDGE 2200 SERVER**
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory
- 2GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- 3Com OfficeConnect Hub 8/TPC

★ *Upgrade to 64MB Memory, add $239.*
★ *Upgrade to a 4GB Ultra-Wide SCSI-3 Hard Drive, add $320.*
★ *4/8GB SCSI DAT Tape Backup, add $749.*

**$3249**

Business Lease: $119/Mo.
Order Code #250070

# THAT AT THESE PRICES, MOVE EVEN FASTER.

## DELL LATITUDE NOTEBOOKS

**Common features:** ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts 12X Variable CD-ROM, 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with *NEW* 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

**NEW DELL LATITUDE® LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB RAM (72MB Max.)
- 2.1GB Hard Drive
- 2nd Lithium Ion Battery
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB RAM, add $299.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *3Com LAN+ 33.6 Modem PC Card, add $349.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Leather Carrying Case, add $129.*

**$3999**‡

Business Lease: $144/Mo.
Order Code #800130

**NEW DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 24MB RAM (72MB Max.)
- 2.1GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $199.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Leather Carrying Case, add $129.*
★ *3Com 10Base-T Network Card, add $139.*
★ *Dell Latitude LM Port Replicator, add $159.*

**$3599**‡

Business Lease: $130/Mo.
Order Code #800132

**NEW DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Nylon Carrying Case, add $69.*

**$3299**‡

Business Lease: $122/Mo.
Order Code #800140

**DELL LATITUDE LM P133ST**
133MHz PENTIUM® PROCESSOR

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive

★ *Upgrade to 24MB RAM, add $100.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Nylon Carrying Case, add $69.*
★ *3Com 10Base-T Network Card, add $139.*

**$2799**‡

Business Lease: $104/Mo.
Order Code #800138

**available. What can we build yours to do?**

MMX™ intel inside pentium PROCESSOR

TO ORDER TOLL-FREE
**800-289-1490**
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada, call 800-232-8978
GSA Contract #GS-35F-4076D
Keycode #03264

DELL®

better performance, add RAM or buy a faster system.

**Databases: More bad news.** The newest Windows 95 databases were unimpressive in our tests. Access 97 was the big loser, performing about 25 percent slower than Access 95 on our Pentium-90. Access 95, and Approach 96 and 97, all scored about the same. Approach did especially well in a key database task, finding and filtering records. In a test that required the databases to find 24,000 records in a 45,000-record table, Access 97 took 33 seconds, more than twice as long as either version of Approach. Access 95 completed the task in 24 seconds, which was still slower than either version of Approach.

The differences between Approach 95 and Approach 97 are negligible, on both the Pentium-90 and Pentium MMX-200 with more RAM. But we did find that, as with Access, you can gain a performance boost in both versions of Approach by upgrading to a Pentium MMX machine. This upgrade will improve performance by one and a half times for both Approach 96 and Approach 97.

Access 95 was faster than Access 97 in all but two tests on the Pentium 90. On our Pentium MMX-200 system, Access 97 ran 20 percent faster than Access 95 in overall performance. The upshot? If you're unhappy with your current Windows 95 database, don't look to a suite upgrade for a performance boost. If you need the power and new features of Access 97 and you plan to manipulate huge databases, make sure you've got the hardware to support it.

The **best reason** to upgrade your software suite is to **get hold of slick new features.**

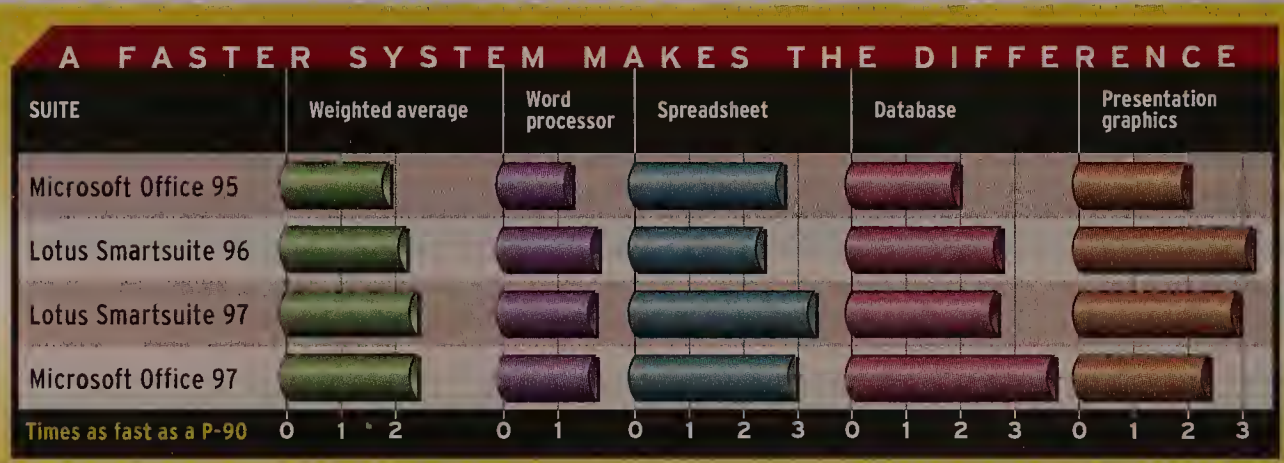
**Presentation Graphics: Lotus wins one.** Lotus's Freelance has long been a leading presentation graphics program due to ease of use. It has now proved itself worthy on yet another front: performance. Overall, Freelance 96 was more than four and a half times as fast as Microsoft's PowerPoint 95, and Freelance 97 was over three times as fast as PowerPoint 97. The main problem with PowerPoint was printing, lagging behind both versions of Freelance.

Freelance 96 and Freelance 97 performed almost identically on the various tests.

But there's some good news for PowerPoint users. PowerPoint 97 cut printing time in half, taking a little less than 2 minutes to print our 45-slide sample presentation compared to close to 4 minutes in PowerPoint 95. (Freelance printed our sample presentation in about 30 seconds.) On the Pentium MMX-200, printing speed doubled in PowerPoint 95 and nearly tripled in PowerPoint 97.

When we ignored the printing tests, PowerPoint 95 pulled about even with both versions of Freelance. But PowerPoint 97 then fell behind the pack.

Freelance 96 users seeking additional performance boosts should upgrade their hardware. Moving to Freelance 97 adds features but doesn't improve performance. On the other hand, PowerPoint 95 users looking for faster printing would do well to upgrade their software.




**THE SUITES WERE ponderously slow on our Pentium-90. But when we retested with a Pentium MMX-200 with 32MB of RAM, performance surged. Scale shows performance in times as fast as tests on a Pentium-90.**

## THE WINNER: NONE OF THE ABOVE

A HARDWARE upgrade is your best bet if you're looking for better overall performance from your software suite. But if you've got a particular application that's dogging you, upgrading your software is an option in specific cases—just be aware of the trade-offs.

For example, although Word Pro 97 is faster than its predecessor, 1-2-3 release 97 is a disappointment, particularly if you regularly need to print large and complex spreadsheets. And Office 95 users looking for better performance are out of luck. Compared to their Office 95 predecessors, PowerPoint 97 can print faster, Excel 97 is only slightly quicker, and Word 97 and Access 97 are dramatically slower.

The best reason to upgrade your software is to get hold of slick new features. If you pair the latest software suites with the latest hardware, you'll have the best of both worlds—features and performance.

—*Cathy Kenny* ▶

**SmartSuite 97**
Lotus Development Corp.
800/343-4514, www.lotus.com
Street price $399, upgrade $149
READER SERVICE NO. 780

**Office 97 Professional Edition**
Microsoft Corp.
800/426-9400, www.microsoft.com
Street price $599, upgrade $349
READER SERVICE NO. 781

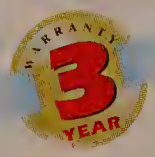
# COME SEE FOR YOURSELF!

Aurora Vision 14"
14"/13.2 viewable
0.28mm dot pitch

AV2 585F
15"/13.75 viewable
0.28mm dot pitch

AV2 785F
17"/15.8 viewable
0.28mm dot pitch
AV2 765F
17"/15.8 viewable
0.26mm dot pitch

**See Us at:**
**PC Expo, NY**
**Booth# 1164**




**Quality** **Performance** **Price** **Availability**

## Everybody wants "Value in Technology"™! So, SHINHO designed and manufactured it.

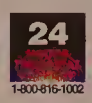
With these key factors, SHINHO takes its pride in manufacturing Aurora Vision and AV2 monitors in ISO 9001 certified factories. SHINHO monitors provide users with high refresh rates for flicker free displays that bring out sharper vivid colors. Easy access On-Screen-Display adjusts for H/V size, H/V position, geometric distortion including pincushion, trapezoid, parallelogram and rotation, as well as contrast, brightness, color temperature, and degauss. AV2 monitors are Plug-n-Play, VESA DDC 1/2B compatible and meet or exceed major international production safety and regulatory requirements including CE, UL, FCC-B, CSA, BRH, FTZ, EPA, GS-TUV, DHHS, and MPR-II. Of course, all SHINHO monitors carry industry leading 3 year limited warranty on labor, parts, including CRT. So come see for yourself or call **(888) 4-SHINHO (474-4646).**

**SHINHO®**

**Value in Technology™**

(888)4-SHINHO

16200 A Carmenita, Cerritos, CA 90703
Tel: 562-802-8116 • Fax: 562-802-7637
Internet: http://www.shinhousa.com
E-mail: shinho@shinhousa.com



**Circle 207 on reader service card**

1997 SHINHO Electronics & Communications. All rights reserved. All trademark and registered trademarks are properties of their respective companies. Specifications and prices subject to change without notice.

# Free E-Mail: A Viable Option for Careful Consumers

UPDATE

FREE E-MAIL has transcended novelty status: Three free e-mail services are celebrating one-year anniversaries, and two of them claim more than a million customers. But as with any free offer, it pays to think carefully about what you're getting into: Already, one service has gone out of business, and industry watchers caution that others may follow.

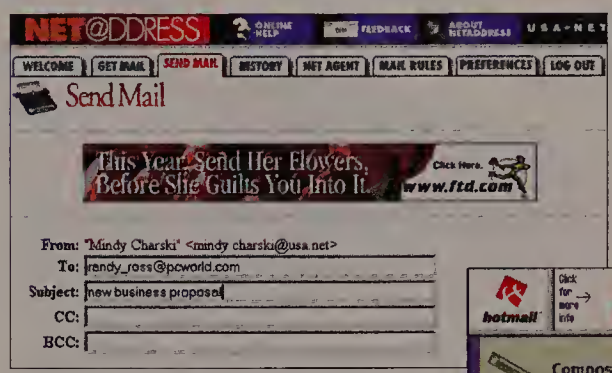
*Free* is a relative term. Only one of the large established services, Juno Online Services, is actually free. You can send and retrieve e-mail using the vendor's software and a local phone number. Two of the others, HotMail and NetAddress, are Web based, which means you'll need Internet access to use them.

## THE OFFERS

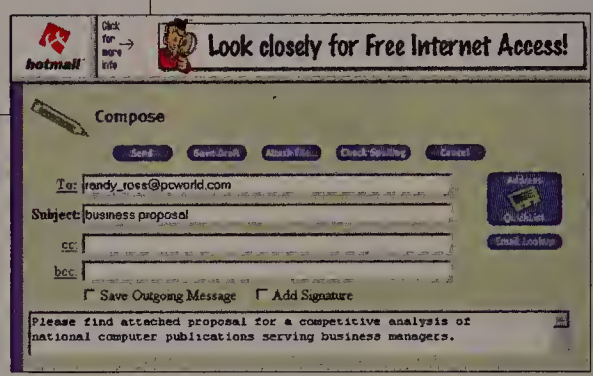
SEMANTICS ASIDE, free e-mail can still save you money. Internet service providers often limit the number of mailboxes available in their basic services. So instead of paying to upgrade your ISP account just for e-mail, you can add free e-mail accounts for additional users at no cost.

Free e-mail accounts let you change service providers as often as you want in search of the lowest price. Even when you change providers, your e-mail address stays the same, and as long as you have access to the Internet you won't miss any important messages.

When picking a free e-mail service, look at the number of users it has, how long it's been up, and how easy it is to use. Also note key features such as support for phone books and attachments, and the ability to store e-mail in folders. HotMail, NetAddress, and Juno offer many of these features. In addition, they've been around for at least a year and boast a large number of members.




**CLEAN AND SIMPLE:** NetAddress offers a simple interface ideal for less-experienced PC users.




**MORE MUSCLE:** HotMail offers more features, including the ability to send attachments.

HotMail says that about 3 million users have registered for its service since it was launched last summer. HotMail provides free access to 15 news offerings, including the financial services Quote.com and Closing Bell. You have the option of including a "signature" in messages, which lets you add your phone and fax numbers to outgoing mail. You can also spell-check your mail. To send attachments, you'll need Netscape Navigator 2.0 or higher. HotMail limits you to 2MB of space on their server, which could become cramped if you typically hold messages for long periods of time or need to receive large file attachments. (For more on HotMail, see "Hot Picks for the Home Office," in this issue.)

NetAddress is ideal for less-experienced PC users. It started in April 1996 as a fee-based service but became free last December; it now has about 700,000 subscribers. The interface uses a simple and easy-to-navigate filing-cabinet metaphor. Simplicity has its trade-offs, however; while you can read attachments, you currently cannot send them, and there's no spelling checker. Both features will be available soon, according to USA.Net. NetAddress provides you with 3MB of space on its server.

Since Juno is not a Web-based program, you don't need to pay for ISP service—all you need is a modem and a phone jack. Juno claims to have 2.2 million users. The year-old company says about 95 percent of its members can dial in to one of its 400 local numbers for no charge. The program is about 1.2MB, so it could take about 5 to 10 minutes to download on a 28.8-kilobits-per-second modem. It was easy to install and includes some niceties, such as a spelling checker. On the downside, the service does not support attachments.

## THE CATCH

BEFORE TRUSTING your e-mail to one of these services, consider the drawbacks. Because these services are supported by advertising, your messages are accompanied by distracting banner ads that often flash wildly on your screen. HotMail was the most annoying because it adds a one-line advertisement for its service at the end of your outgoing mail. NetAddress will soon put ads into your incoming messages.

To register for the services, you have to answer 10 to 20 questions about your age, income, hobbies, and so forth, so advertisers can target you with their products. (But each service says it will not sell personal information about you to advertisers directly.)

Finally, selling ads online is a competitive and uncertain business. To increase your odds of having a service that will be around for a while, select one that's larger and more established; however, there are no guarantees. Then again, you can't beat the price.

—*Mindy Charski* ■

**HotMail**
HotMail
888/932-6245, www.hotmail.com

**NetAddress**
USA.Net
800/592-1240, www.netaddress.com

**Juno Online Services**
D.E. Shaw & Co.
800/654-5866, www.juno.com

# A FLIGHT *of* FANCY.

ADOBE PHOTOSHOP 4.0

Let your imagination soar. Because the newest version of Adobe Photoshop has the wings to take you anywhere. Now, the world's leading photo design and production tool has evolved. Version 4.0 adds a host of new capabilities to send your productivity and creativity skyward. So whether you are designing compelling visuals for print, laying out a sexy interactive interface for your latest multimedia creation, or processing scores of images to fuel your Web page, Photoshop 4.0 is the indispensable tool that's ready to lift your visions to new heights. Call 1-800-492-3623, offer code 26117 or visit our web site at www.adobe.com.

CALL NOW FOR YOUR
UPGRADE
TO THE NEW ADOBE PHOTOSHOP 4.0 FOR MACINTOSH® AND WINDOWS®

**Actions** boost your productivity by letting you automate critical imaging tasks and then apply them to a folder full of images.

With support for all the key **Web file formats**, it's no wonder that Adobe Photoshop is the number one tool for Web image processing.

**Grids and Guides** bring precision layout capabilities to even the most complex compositing projects.

**Free Transform** allows virtually unlimited experimentation while retaining image quality.

**Adjustment Layers** give you unlimited flexibility for color and tonal corrections.

Adobe

If you can *dream* it, you can *do* it.®

Adobe, Adobe Photoshop and the tagline, "If you can dream it, you can do it" are trademarks of Adobe Systems Incorporated. Macintosh is a registered trademark of Apple Computer, Inc. Windows is a registered trademark of Microsoft in the U.S. and other countries. All other marks are the property of their respective companies. ©1997 Adobe Systems Incorporated. All rights reserved.

**Circle 12 on reader service card**

You can make
sacrifices
for your career.

You can make
sacrifices
for your family.

Or you can
choose not
to make sacrifices.

Introducing the Compaq Armada 7700. The high performance notebook that offers you the pow
and functionality of an office desktop as far from your office as you need to be. Armada 7700
features include: up to 166 MHz Pentium® processor with MMX™ technology, 12.1" CTFT display,

© 1997 Compaq Computer Corporation. All rights reserved. Compaq registered U.S. Patent and Trademark Office. Armada is a trademark of Compaq Computer Corporation. The Intel Inside Logo and Pentium are registered trademarks and
may not reach 56Kbps, and will vary depending on line conditions.

up to 2.1 GB removable hard drive, up to 32 MB EDO RAM expandable to 144 MB, integrated
33.6K telephony modem upgradeable to 56K*, integrated AC, and full desktop expansion.
locate a Compaq Authorized Reseller, call 1-800-943-7656 or visit www.compaq.com.

COMPAQ
Has It Changed Your Life Yet?

demark of Intel Corporation. *Upgrade planned for year end. The K56flex protocol is designed only to allow faster downloads from K56flex compliant digital sources. Maximum achievable download transmission rates are currently unknown.

# NEW PRODUCTS

## SoftRAM 3.0: Another Software Accelerator To Avoid

UTILITY

LIKE A LATE-night infomercial, Syncronys Softcorp's **SoftRAM3** makes tantalizing promises: The box describes the $30 product as a "powerful three in one performance suite" that will "maximize your memory, accelerate your CD [and] boost your system."

SoftRAM tries to improve PC performance through software-driven dynamic RAM compression and caching. Previous memory products that attempted to increase performance without adding physical RAM have been disappointing, as was the shipping copy of SoftRAM3 for Windows 95 and 3.1 we tested.

At first, we experienced frequent crashes on two Dell Windows 95 machines with 16MB of RAM (a Pentium-133 and a Pentium-75), as well as on a Windows 3.1 Toshiba DX4-75 notebook PC with 12MB of RAM. This problem was unexpected, because the SoftRAM box recommends a PC with at least 8MB of RAM. Our testing revealed à software bug, and consequently Syncronys posted new versions of the program on its Web site. (It's downloadable if you've purchased SoftRAM3.) Fixed versions should be in stores by June, says Syncronys.

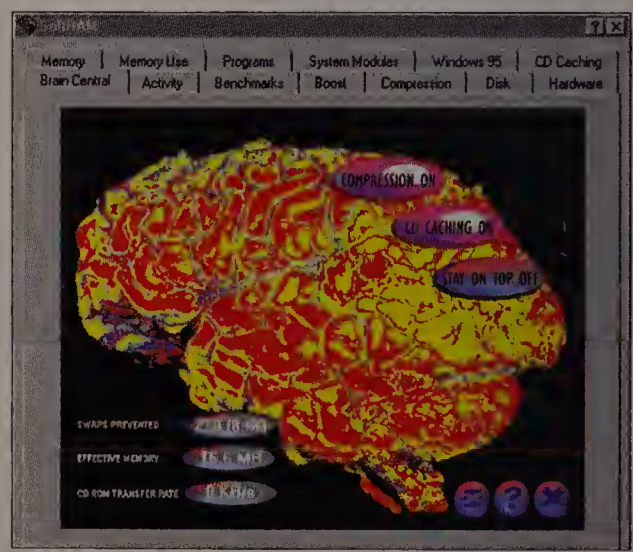
However, SoftRAM3 provided almost no change in Windows 95 system performance. On the Dell P-133 test system with 16MB of RAM, we found no real improvement in performance, as measured by PC WorldBench tests. Nor did we see any meaningful speed increase in the timed tests of common tasks like launching an application or opening a file. The PC's performance with and without SoftRAM loaded was almost identical. When we first discovered the bug, Syncronys had suggested increasing the RAM to at least 32MB as a fix. To play it safe, we upgraded the Dell P-75 test machine to 48MB of RAM. Performance testing on this system showed similarly unimpressive results.

Syncronys does not say that Windows 95 users will be able to load more applications if SoftRAM3 is installed. But the company does make that claim for Windows 3.1 users. A note near this claim on the package reads: "Results may vary based on your system and applications." In our Windows 3.1 tests on the Toshiba Satellite T2155CDS notebook with 12MB of RAM, we were not able to open any more applications with SoftRAM installed than without it.

### NEW VERSION, OLD PROBLEMS

SYNCRONYS made news in *PC World* and elsewhere in 1996 when tests of the previous release of SoftRAM, called SoftRAM95, showed no significant change in PC performance. The Federal Trade Commission pursued Syncronys for making false advertising claims. In July 1996, Syncronys settled with the FTC but admitted no wrongdoing. The company also took SoftRAM95 off the market.

How does SoftRAM3 work? It attempts to optimize RAM through compression and buffering. As Windows swaps memory pages out of RAM to make room for other programs or data, SoftRAM captures, compresses, and holds selected pages in a part of




**BRAINY IT'S NOT: SoftRAM's Brain Central panel looks fancy, but the program isn't very effective.**

PHOTOGRAPH: KEN SMITH

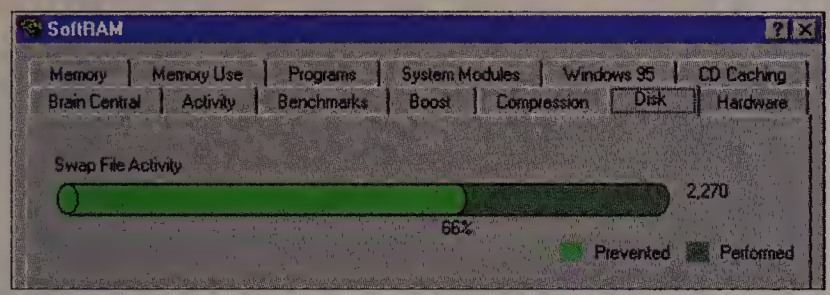
**SoftRAM3**

PRO: None identified, although enhanced CD-ROM performance is possible.

CON: Did not improve overall system performance.

VALUE: Not recommended.

**Syncronys Softcorp**
888/777-5600
www.syncronys.com
Street price: $30
READER SERVICE NO. 753




**SWAP TALK: SoftRAM's disk compression doesn't do much.**

memory it sets aside for itself. The goal is to improve performance by reducing the number of times the pages swap in and out of RAM.

The lack of results shown in our tests of SoftRAM with both Dell PCs follows the pattern of other memory enhancement products we've tested (see "Software Speed-Ups: Bold Claims and Dubious Promises," April).

Installation also may not be smooth. If you have a Windows 95 machine that has been upgraded from Windows 3.1 or has any 16-bit drivers, SoftRAM may cause problems requiring technical support.

### THE BOTTOM LINE

SOFTRAM's promotional materials also promise that the product will enhance a CD-ROM drive's performance through an adjustable cache. We did not have time to test this feature after the corrected version 3.0 arrived, but similar products have provided only modest performance benefits.

Finally, the box says SoftRAM will "boost your system": This refers to optimizing some system settings stored in the Windows 95 Registry and in the system.ini and win.ini files. These boosts aren't available if you use Windows 3.1.

If you are using Windows 95, SoftRAM shows original and optimal setting for various parameters, and you can click a Boost button to optimize each setting. But when we viewed the settings on our P-133 and P-75 test PCs, most were listed as "already optimized," with the Boost button grayed out and unavailable.

The Brain Central feature offers data on disk activity and the like—data already found in most utility programs.

Based on our experience, you won't like the show that SoftRAM3 puts on. Your best bet is to pass.

*—Dean Andrews*

CONTENTS

80 Syncronys SoftRAM3
81 Toshiba Libretto mininotebook
82 Epson Stylus Photo and Alps MD-2300 Masterpiece printers
82 Font F/X graphics software
84 Hi-Val DVD kit
84 Ositech Trumpcard modem
86 Video Blaster WebCam
86 PKZip/Quick View Plus bundle
88 Nuts & Bolts utilities package
92 SPSS Smart Viewer
92 SurveyWin
92 Digital's Voice Plugin
94 pcAnywhere CE
94 mini-PCL3 palmtop light
94 ScreenPrint Gold
96 Color PageWiz and FotoTak-6
96 Kensington SmartSocket
106 Matrox Millennium II
106 Alaris QuickVideo Transport
106 Diamond Fire GL 1000
108 Primavera SureTrak 2.0
108 HotDocs Pro forms creator
110 Adobe After Effects 3.1
110 Active Presenter bundle
115 Adobe Illustrator 7
116 Eagle Nest storage products

INTERNET

online

FOR MORE PRODUCT news and the latest announcements, check out the PC World Daily News Service at www.pcworld.com/news.

# World's Smallest Notebook: Toshiba Libretto

NOTEBOOK

IT'S NOT A souped-up PDA. And it's not simply a thin notebook. We're not sure exactly what to call the **Toshiba Libretto**. This $2000 "mini-notebook" weighs less than 2 pounds but packs a Pentium-75 processor, a 760MB hard drive, 16MB of EDO RAM, and the full version of Windows 95, so it can run everyday business applications. A preproduction version looked promising but wasn't ready for testing at press time.

The Libretto is only about 1.3 inches thick and is shaped and sized like a very thin brick. It takes up hardly any room in a briefcase. It has a small but exceptionally bright 6.1-inch active-matrix color screen. Its 80-key keyboard is smaller than an average notebook's; it should be fine for working on memos and spreadsheets, though not for writing a novel. A trackball sits to the right of the screen, with the buttons on the back of the display. Although this sounds rather strange, it's not difficult to use.

A PC Card slot can accommodate an optional modem or external floppy drive (expected to sell for about $100). A port replicator costs about $200.

For the price, you'd obviously get more speed and included features in an 8-pound notebook. But if you need to run basic business apps on a much lighter machine, the Libretto could be a good travel companion.

*—Eric Hellweg* ▶

**IT'S MUSIC TO THE EARS OF FREQUENT TRAVELERS: Toshiba's Libretto gives you a Pentium-75 processor, 16MB of RAM, and a 760MB hard drive in less than 2 pounds.**

**Toshiba Libretto**

PRO: Lightest notebook PC we've ever seen.

CON: A basic machine; small keyboard is appropriate only for short documents.

VALUE: Promising if light weight is most important to you.

**Toshiba Computers Systems Division**
800/334-3445
computers.toshiba.com
Street price: $2000

READER SERVICE NO. 754

EDITED BY
Yardena Arar and Laurianne McLaughlin

# Epson and Alps Personal Printers: Best Photo Quality Yet

PRINTERS

MOST PERSONAL color printers can't produce pictures that look remotely like the snapshots processed by your local one-hour photofinisher. But two printers set a new standard in the category. Epson's **Stylus Photo** and Alps's **MD-2300 Masterpiece** really do justice to photos and can handle business-quality text documents, too. They're a different breed from such photo printers as Panasonic's TruPhoto, which prints *only* photos on small, specially treated paper.

The biggest catch is that Epson's and Alps's new units are expensive compared with typical ink jets like the $299 Epson Stylus Color 600, the top model on *PC World*'s June Top 10 Personal Printers chart.

The $499 Stylus Photo looks and works a lot like Epson's other ink jets but uses six ink colors rather than the usual four. This makes a huge difference with photos: Skin tones are much more faithful, fabrics retain their textures, and small details don't get lost in dithered dot patterns.

Is the Stylus Photo's print quality truly photo-realistic? If you squint, you may see very tiny dots in the printed photos, but the images look far better than most magazines'. The output is best if you invest in Epson's glossy paper, which costs more than a dollar per sheet. Pictures printed on this paper will look nearly as good as the "real" photographs hanging on walls in your home. The Stylus Photo also works reasonably well with plain paper, although its black text could be crisper.

At $749, Alps's MD-2300 Masterpiece costs $250 more than the Epson, and the print quality on Alps's special photo paper (also costing a little over a dollar a sheet) is only marginally better. The Masterpiece, which uses Alps's Micro Dry technology, prints more slowly than the Stylus; it took more than 9 minutes to complete a 4-by-6-inch image that the Epson printed in 6.5 minutes.

On the plus side, the Alps's paper feels thicker and sturdier than the Epson's—more like real photo paper. Also, the Masterpiece's black text on plain paper equals laser output in sharpness. According to Alps, the Masterpiece's output is lightfast (whereas prints from ink jets such as the Stylus Photo may fade over time).

As admirable as the Alps's print quality is, the unit does have some minor design flaws. Unlike the Epson, it uses special ink cartridges for its photographic mode; you must open it up to swap them in and out. And the Alps's noisy fan stays running much of the time, even when it isn't printing.

Both of the printers come with good photo-editing software: Epson includes LivePix, and Alps bundles Adobe PhotoDeluxe.

Overall, we'd recommend the Epson Stylus Photo as a better value. It's not cheap, but it's worth the price for families who want to print high-quality photos, for digital photography enthusiasts, and for small-business owners, such as real estate agents, and others who use marketing materials packed with photos.

—*Harry McCracken* ▶

**EPSON'S STYLUS PHOTO WINS:** Great quality, low price.

**ALPS MD-2300 MASTERPIECE:** Smoother images, but at a cost.

**PRETTY PICTURE:** Alps's MD-2300 Masterpiece delivers crisp color photos and sharp text.

### Epson Stylus Photo

**PRO:** Virtually photographic print quality.

**CON:** Costlier than most ink jets.

**VALUE:** Excellent if you need top-quality photo output.

**Epson America, Inc.**
800/463-7766
www.epson.com
Street price: $499

### Alps MD-2300 Masterpiece

**PRO:** Virtually photographic print quality and laserlike text.

**CON** Very expensive, requires frequent swapping of ink cartridges.

**VALUE:** A fine printer, but the Epson is a better deal.

**Alps Electric (USA), Inc.**
408/432-6000
Street price: $749

READER SERVICE NO. 755

## QUICK TAKES

### Quick 3-D Graphics

With Font F/X you can quickly produce nifty 3-D logos for use in presentations, Web pages, and other documents. This software has a straightforward interface, a well-designed wizard, and plenty of templates, so creating 3-D type effects doesn't require much more effort than typing in the text and selecting a predesigned look. If you feel more ambitious, you can easily customize the color, texture, and lighting of your logos, although the results sometimes look a little jagged because Font F/X doesn't use antialiasing to smooth edges. At $79, this program is a bit pricey, considering that more versatile 3-D graphics packages like Micrografx's Simply 3D also sell for less than $100. DCSI; 303/447-9251; www.dcsifx.com

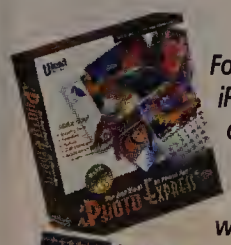
READER SERVICE NO. 756

—*Harry McCracken*

# Fasten Your Seatbelt.

## Faster Scanning. Intense Color.

**INCLUDES:**



*For Windows models: Ulead® iPhoto Express™ (Windows® 95/NT compliant) photo-fun software to make greeting cards • calendars • announcements • Windows wallpaper • and more*

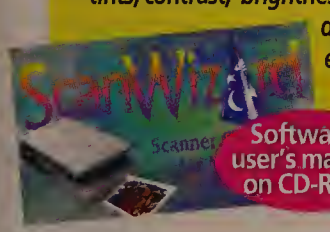
*For Macintosh models: MicroFrontier Color It! 32-bit image-editing/paint software*

*Windows or Mac models: Visioneer® PaperPort document management software. Drag-n-drop scans to OCR, fax, e-mail or printer software*

visioneer PAPERPORT

*For Windows or Macintosh models: Caere's OmniPage Limited Edition OCR software for scanning and converting pages of text into digital files that can be edited*

*For Windows or Macintosh models: Microtek's award-winning ScanWizard™ scanner controller "...arguably the best in the business..." according to PC Magazine (3/4/97). Adjust color tints, contrast, brightness, remove halftone dots and more. See enhancements on screen before the final scan.*




Software & user's manuals on CD-ROM!

**Drive It With The Top Down or Up & Enjoy The Scenery.** Microtek's new and incredibly fast *ScanMaker® V300* color scanner is a sporty little model that's small enough to park on your crowded desktop, yet powerful enough to scan and place virtually any color image or document directly into your computer. Capture breathtaking color photos, documents, even 3-dimensional objects in seconds. And it's full-loaded with software at an amazingly low sticker price.

**New Technology from Microtek Engineering.** The ScanMaker V300 features many new advances in scanning technology including the *FlexScan™ Lid*, a unique hinge design that allows the V300's lid to remain flat even when scanning books and other 3-dimensional objects; stay upright to align documents on the scan bed; or quickly detach for scanning oversized documents. A *Parallel Port Cable* is included for Windows models for quick-and-easy / plug-n-play installation, so there's no need to pry open your PC to install an interface card. And with *Microtek's Zero Reflection Design Technology™* you get denser, sharper color through optic and hardware design that minimizes light "bounceback" whenever you scan.

**Want More?** For the Microtek reseller nearest you or more information about the new ScanMaker V300, call Microtek Sales at **1-800-654-4160**. For information about scanning or Microtek's other great products, dial our AutoTech fax back system at **310-297-5101** or point your Web browser to our award-winning Web site: **www.microtekusa.com**.

MICROTEK
## ScanMaker V300

**Available in Windows or Macintosh models**

Works with Windows® 3.1x, 95 & NT!

Mac™OS

- *24-bit color depth*
- *Incredibly fast single-pass scanning*
- *300 x 600 dpi optical resolution*
- *4800 x 4800 dpi enhanced*

**MICROTEK**
*Better Images Through Innovation.*

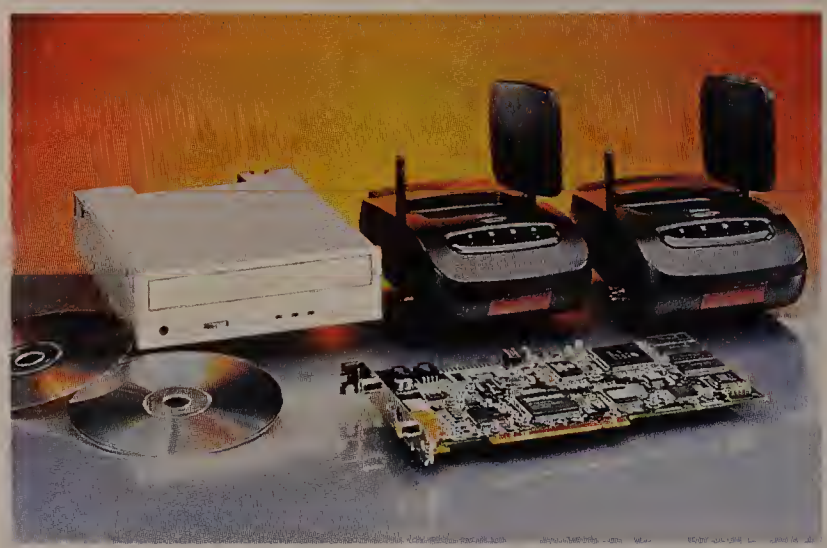
Price mentioned is U.S. suggested street price. Bundled software and user's manuals are on ScanMaker V300 CD-ROM. Retail packaging of software depicted is not available. The following are trademarks or registered trademarks of their respective companies: Microtek, ScanMaker, Zero Reflection Design Technology, Flex-Scan Lid, and ScanWizard of Microtek Lab, Inc.; Windows of Microsoft Corporation; Macintosh of Apple Computer, Inc. OmniPage Limited Edition of Caere Corporation (1-800-535-7226); PaperPort of Visioneer, Inc.; Color It! of MicroFrontier, Inc.; iPhoto Express of Ulead Systems, Inc. All other trademarks or registered trademarks are the property of their respective holders. Prices, specifications and software bundles are subject to change without notice. V300PCW597

# Hi-Val DVD Kit: Send Movies Wirelessly To Your Television

MULTIMEDIA

AFTER MORE THAN a year of hype, the first Digital Versatile Disc products are trickling into stores and tempting multimedia enthusiasts. This new medium allows video and audio quality that far surpasses that of today's CD-ROMs. The 4.7GB discs will be used for everything from interactive multimedia games and titles to full-length films. You won't find many movies yet—only a handful of DVD titles are currently on sale, and only in selected major cities. Most titles should ship late this year.

If you want to jump into DVD now, a key question arises: Do you buy a DVD player to use with your TV for movies, or a DVD-ROM drive to play games on your PC? There will be different ways to connect your computer and TV and to share DVD devices, but Hi-Val has one of the first—a kit called the **Hi-Val Home Entertainment System**. It will sell for $849, about the cost of a high-end DVD player, and offers a unique approach.



**NOVEL BUT IMPERFECT: Hi-Val's Home Entertainment System lets a PC and TV share a DVD-ROM drive, but it needs work.**

The kit bundles a Toshiba DVD-ROM drive with a Cinemaster card that installs in your PC, with a wireless radio transmitter-receiver box for your television. You can use the drive with your PC and its monitor, just as you use a CD-ROM drive today. But when you want to watch a movie, the DVD Remote software can deliver the show to any TV set in your home—without wires. It's a smart idea: You pop the disc in your PC's drive but watch the movie on your big-screen TV.

### NICE RESULTS, MESSY SETUP

IF THIS SOUNDS rather complicated, it is. Setting up the Hi-Val is a time-consuming adventure that involves hooking up the internal DVD-ROM drive; installing the Cinemaster card, its drivers, and DVD Remote software; making the right connections between the Cinemaster, sound card, and radio transmitter; and then connecting the receiver to your TV or VCR.

The preproduction kit I tried out worked okay, but not on my home PC—a Pentium-133 of late-1995 vintage that lacked an Intel PCI chip set with bus-mastering capability. Most newer PCs have this chip set, which is listed clearly in the Hi-Val's system requirements. Make sure your PC has it too, before trying to install the kit.

### REMOTE CONTROL CRAVINGS

I HAD SERIOUS reservations about the Hi-Val kit's limitations as a DVD movie player. Your TV set doesn't have to be near the PC—the wireless transmission range is 300 feet, and it works even through walls. But the transmission works only from the computer to the TV, not vice versa. So even the simplest task must be performed from the PC. If your television isn't close by, even pausing a film will be inconvenient. According to the vendor, future editions of the kit will come with a remote control device.

Hi-Val plans to ship the systems with a half dozen DVD discs. The one movie included is *Muppets Treasure Island;* the five games and multimedia titles are The Daedalus Encounter, Spycraft, Wing Commander IV, Silent Steel, and Encyclopedia Electronica. None of these discs are must-haves. There aren't many DVD titles available right now that vendors can choose from for bundling. That should change by this fall.

Hi-Val's Home Entertainment System offers appealing flexibility, but be aware of its ease-of-use drawbacks. Based on my experience, you may enjoy DVD more if you wait for an improved version of this product.

—*Yardena Arar* ▶

### Hi-Val Home Entertainment System

PRO: DVD for PC and television in one reasonably priced package.

CON: Complicated setup, no control at TV end.

VALUE: A flexible product, but consider waiting for the next version.

Hi-Val
888/383-4482
www.hival.com
Street price: $849

READER SERVICE NO. 757

## QUICK TAKES

### Double-Duty Notebook Modem

When you're on the road and trying to get online, few things are more irritating than discovering that a normal-looking phone line is digital—a common situation in large corporate facilities—and that your standard analog PC Card modem won't work with it. You could travel with a separate digital modem, but with Ositech's $210 Trumpcard Five of Diamonds you don't have to bother. It works both ways. The only extra baggage is a supplied connector that fits into the handset of the digital phone. You have to dial a digital phone manually, and you may need to use the supplied software to adjust settings—a small price to pay for the convenience. An $85 optional kit is available for cellular connections. Ositech Communications, 888/674-8324, www.ositech.com

READER SERVICE NO 758

—*Yardena Arar*

Introducing the TravelMate® 7000

Single 7-hour battery

166MHz Intel® Pentium® processor with MMX™ technology

32MB RAM

2.0GB/3.0GB hard drive

12.1" active matrix screen

10X CD-ROM

33.6 Kbs internal fax/modem

DockMate III (optional)

7.5 lbs.

Windows® 95 or Windows® NT

Wireless LAN ready

# THE 7-HOUR

*TravelMate 7000 is at home at the office or on the road. And, it has the brains to know the difference.*

With a single battery that keeps you fully-functional for 7-hours*, the Texas Instruments® TravelMate® 7000** outperforms any mobile solution in its class. Snap it into the automatically configuring DockMate™ III and you have a desktop that easily connects to all your peripherals. With cutting-edge technology, it's no wonder Acer® is the fourth largest notebook manufacturer in the world. Just look at the TravelMate 7000. You won't find anything more intelligent.

VeriTest Battery Life Results in Hours***

| | |
|---|---|
| TravelMate 7000 (166MHz MMX) | 7:26 |
| IBM ThinkPad 760ED (133MHz) | 2:38 |
| Toshiba Tecra 720 CDT (133MHz) | 2:38 |
| Dell Latitude XPi (150MHz) | 4:15 |
| HP Omnibook 5500 CS (120MHz) | 2:35 |

MMX™ intel inside pentium® PROCESSOR

TEXAS INSTRUMENTS®

ACER®

*1-800-558-ACER www.acer.com/aac/*

**TravelMate 7000 and DockMate III are products of Acer America Corporation, developed with Texas Instruments.

©1997 Acer America Corporation. Acer and the Acer logo are registered trademarks of Acer America Corporation and Acer Inc. TravelMate and DockMate are registered trademarks of Acer Inc. Texas Instruments and the Texas Instruments logo are registered trademarks of Texas Instruments Incorporated. Intel, The Intel Inside Logo, and Pentium are registered trademarks, and MMX is a trademark, of Intel Corporation. Windows, Windows 95, and Windows NT are registered trademarks of Microsoft Corporation.
*7-hour battery life based on VeriTest Cross Country test March 1997 running Windows 95. ***Full results available at www.veritest.com/tm7000xc.htm

# Creative WebCam: Desktop Video for $170

VIDEO CAMERA

CREATIVE LABS' **Video Blaster WebCam** gives you easy personal desktop video for a street price of only $170. The WebCam, one of the least expensive digital color video cameras to date, comes bundled with software for Internet video phone calls, personalized e-mail greetings, and more.

Its main competitor is Connectix's Color QuickCam, which has similar software but costs $59 more.

**Video Blaster WebCam**

**PRO:** Bargain price, easy to install, big bundle of useful software.

**CON:** As with similar products, images are somewhat jerky.

**VALUE:** Great for video telephony, e-mail, and Web page clips.

**Creative Labs**
800/998-5227
www.creativelabs.com
Street price: $170

READER SERVICE NO. 759

**A CAMERA THAT MAKES YOU SMILE: No elbow grease is required to set up Creative Labs' Video Blaster WebCam. Attach a cable to the PC's parallel port, and you're all set.**

Based on my experience with a prerelease unit, the charcoal-colored, golf ball–size WebCam is wonderfully easy to install. You don't need to unscrew the case of your system—the WebCam's cable connects to the parallel port of your PC. The camera unit sits on top of your monitor, and the power adapter plugs into a standard or PS/2 keyboard outlet (the keyboard cable then connects to the adapter). The only downside: You'll have to buy a pass-through switch if you want to hook up another device to the parallel port, such as a printer or scanner.

The WebCam's useful software bundle includes Ulead MediaStudio 2.5 Video Edition for creating video files; Creative Labs' own Video WebPhone for videoconferencing and making phone calls on the Internet; AltaVista's Howdy, which allows you to create self-extracting multimedia messages for e-mail or Web pages; and Charlotte Internet Stuff's I Spy, which automatically sends periodically updated live pictures to a Web page. The WebCam kit also comes with a microphone.

It took me no more than a half hour to set up the WebCam, install the software, and see myself in 10 frames per second in a small video window on my monitor. At that speed the video looked jerky, but the color wasn't bad, and the overall quality compared favorably to that produced by slightly more expensive digital video cameras.

The WebCam isn't a product to buy for top-quality videoconferencing or video captures. It's intended for home and small office applications.

If you've wanted to dabble in Internet video but were discouraged by the cost, check out the WebCam.

*—Yardena Arar*

# Quick View Plus: No Bargain Bundle

UTILITIES

WHEN ISN'T A bundle a bargain? When for $9 more you can buy a much better combination of tools. Such is the case with PKWare's bundle of **PKZip for Windows** with Inso's **Quick View Plus**.

At first glance, this seems to be a great deal. Quick View Plus—which lets you view, print, and copy from most file types—is one of the best file-handling tools around. And in this age of the Internet, everyone needs a .zip-based file compression program to help keep those uploads and downloads moving. (PKWare introduced the .zip standard back in 1986.)

Sold individually, Quick View Plus costs $59 and PKZip is priced at $49, meaning that the $79 bundle will save you $29.

The problem is that PKZip just isn't worth anything close to $49. Compare it, for example, to Nico Mak's $29 WinZip, a fine compression program that knows every trick in the book and integrates nicely into Windows 95. With WinZip installed, right-clicking a file name gives you an option to compress the file. Not so with PKZip. And once it's installed, Quick View Plus also becomes a right-click option with any file.

Quick View Plus even allows you to view and decompress .zip files, freeing you of the need to buy a compression program as long as you receive .zip files but never create them yourself.

This is a bundle in the crudest sense of the word: one box with two books, two sets of floppy disks, two installation routines, and two user interfaces. Quick View Plus sold separately is a good deal; this bundle is not.

*—Lincoln Spector* ▶

**PKZip 2.5 for Windows With Quick View Plus 4.0**

**PRO:** Quick View Plus is handy for peeking at files.

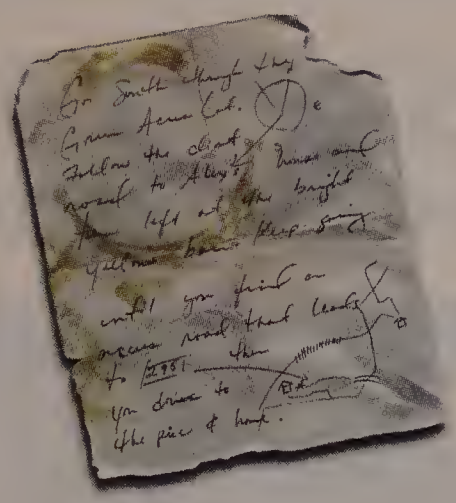
**CON:** PKZip has a clunky interface.

**VALUE:** Pass on the bundle; buy Quick View Plus and another compression program.

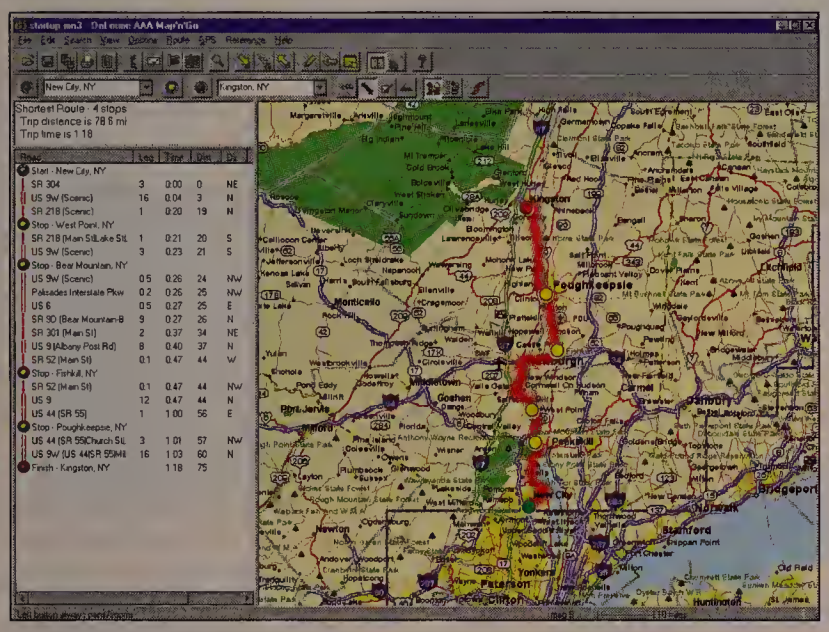
**PKWare**
414/354-8699
www.pkware.com
List price: $79

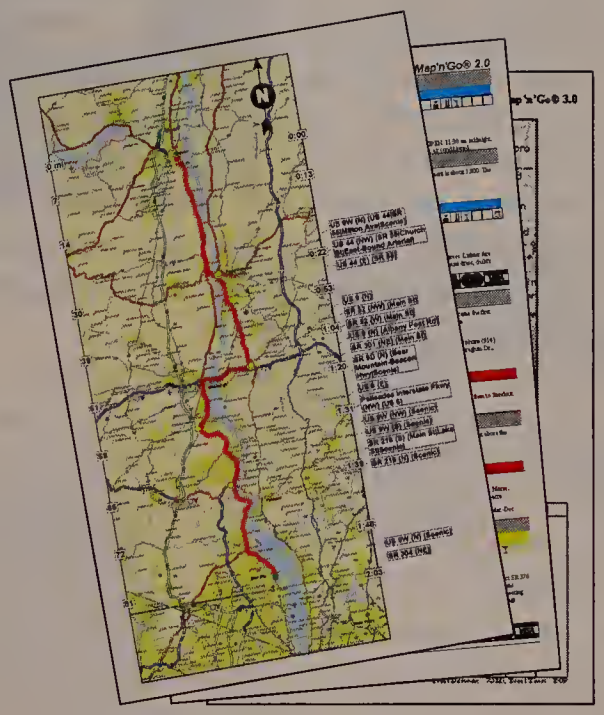
READER SERVICE NO. 760

Some people just give you directions…



AAA Map'n'Go gives you a travel plan.





### Create the Perfect Route!

- Get the route for the way you travel—with the fastest, most scenic or a customized route
- Route around toll roads or busy urban areas
- With over one million miles of routable roads, you get incredibly accurate driving directions

### Complete Travel Information

- AAA Map'n'Go gives you comprehensive, up-to-date AAA information on over 64,000 lodgings, restaurants, campgrounds and fun things to see and do
- Choose lodgings and restaurants by type, price and AAA diamond rating to match your budget and style

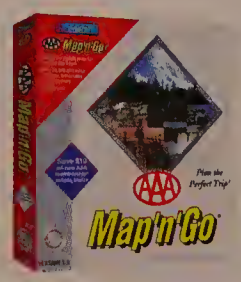
### Plan the Perfect Trip!

- Search detailed street maps of 4,164 cities—locate individual street addresses!
- Print directions or detailed maps—including all your stops along the way
- Get complete US interstate highway exit services
- Find up-to-date travel information with the FREE Internet link to highway construction, tourist events and weather. Or link to city and popular attraction Web sites
- Never get lost again—with the unique link to the Global Positioning System*
- Save $10 on a NEW AAA membership

AAA Map'n'Go®

DELORME®

CD-ROM for Windows® 3.1 and Windows 95 *requires GPS receiver
1-800-795-3951 www.delorme.com




**Circle 37 on reader service card**

# Nuts & Bolts: More Utilities Than Norton for Less Money

UTILITIES

HELIX SOFTWARE'S **Nuts & Bolts** utilities package is so comprehensive that it could have been called "Kitchen Sink." This $50 collection of programs takes on the established category leader, Symantec's Norton Utilities, and gives you more utilities for a lot less money. To come close to the features that Nuts & Bolts offers, you'd need to buy three Symantec packages: Norton Utilities ($125), For Your Eyes Only ($85), and Healthy PC ($30).

The Nuts & Bolts CD-ROM comes with separate 32- and 16-bit versions for Windows 95 and 3.*x*. The 16-bit version does not include some advanced utilities—the Registry editor, for example—that apply only to Windows 95. (I used the Win 95 version in prerelease form.)

If you're using Windows 95 and are comfortable with its nooks and crannies, Nuts & Bolts offers a wealth of useful tools. The only drawback is that it's not a good choice for PC novices. The package is highly customizable, and it makes extensive use of wizards to lead you through complex procedures. But its default configuration installs and activates all features and makes many changes to your PC's setup. The program can be intimidating, too, and it's possible to get yourself into trouble with some of the advanced features, such as those that access Windows 95's Registry.

The utilities fall into four general categories: hard disk cleanup and optimization, system file and configuration repair, security and management, and error prevention and crash recovery.

Besides the hard disk analysis and optimization features you'd expect, Nuts & Bolts has wizards that clean up old, duplicate, and unused files; fix Shortcuts; and maintain and repair the Windows 95 Registry. It creates a single "rescue" floppy disk (by contrast, Norton usually requires several floppies for this purpose).

The Registry Wizard, despite its potential for trouble in inexperienced hands, was useful. An overall tune-up removed unnecessary data and found and repaired corrupted Registry entries.

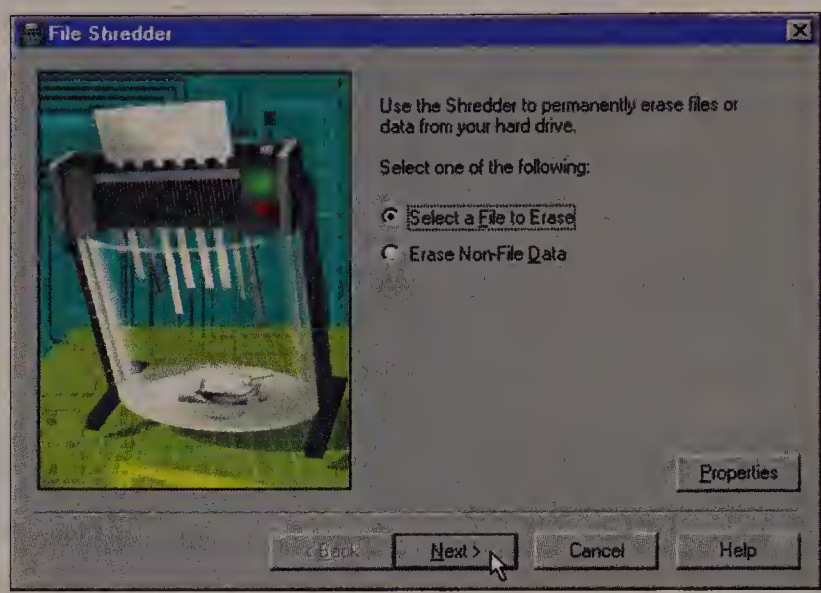
For the security conscious, Nuts & Bolts provides encryption that meets the U.S. government standard (128-bit Triple DES) or a publicly available method called 400-bit Blowfish that's even stronger. There's also a secure shredder feature that wipes out all traces of deleted files. And the Trash Guard feature extends Windows 95's Recycle Bin by saving files deleted within DOS.

All Windows 95 users know that the operating system is far from crash-proof: The dreaded 'Fatal Exception Error' means you've lost your work. But the Bomb Shelter feature in Nuts & Bolts can recover unsaved data, then prompt you to reboot. Helix claims that the utility works at a lower system level than others, such as Norton's CrashGuard, and can detect problems that competitors can't see.

Rounding out Nuts & Bolts is a raft of additional utilities. Zip Manager is a highly detailed hardware diagnostic and system information program. WinGauge, much like Norton's system display, graphically shows various system resources and performance. The tabbed EZ-Setup menu provides easy access to many Windows features, such as moving programs in and out of the Startup group.

With Nuts & Bolts, Helix has created a winning program.

—*Stan Miastkowski* ▶




**HARD DISK HEAVEN: Nuts & Bolts cleans up old and duplicate files and erases all traces of deleted files from your disk.**

**RESCUE ME: Helix's Nuts & Bolts creates a single "rescue" floppy disk; competitors require several floppies.**

**Nuts & Bolts**

PRO: Great price, comprehensive features.

CON: Not for inexperienced PC users.

VALUE: A bargain compared to Norton Utilities.

**Helix Software**

800/451-0551

www.helixsoftware.com

Street price: $50

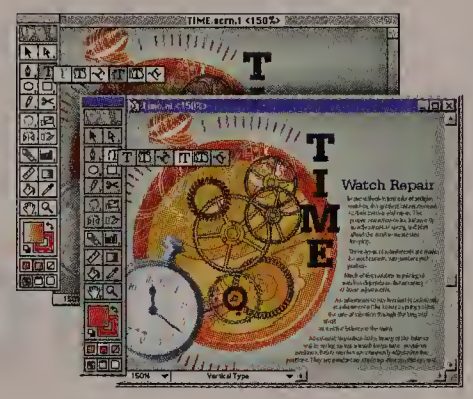
READER SERVICE NO. 761

NEW ADOBE® ILLUSTRATOR® 7.0 *for* WINDOWS®

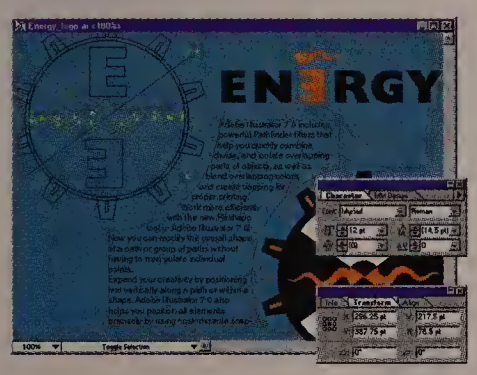
# PICTURE THE POSSIBILITIES

NO JOB IS TOO BIG OR TOO SMALL. From the simplest graphics to the most complex artwork, new Adobe Illustrator 7.0 for Windows handles just about all your illustration jobs.

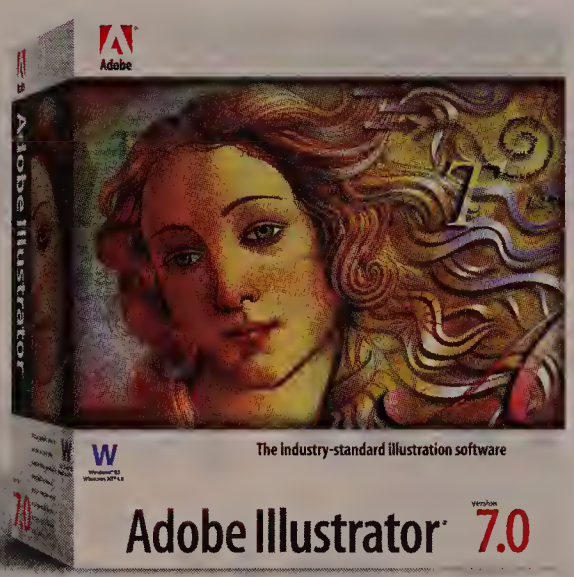
WORKS SEAMLESSLY WITH ADOBE PHOTOSHOP® and Adobe PageMaker® like no other illustration software. You learn and work faster, with the same user interface, including shortcuts and menus. Even drag & drop among all three programs.

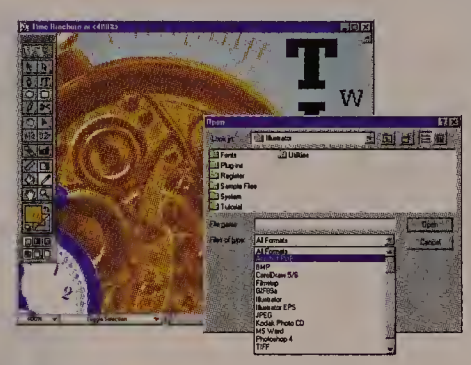



WINDOWS AND MACINTOSH—SAME GREAT FEATURES. It's never been easier to share files across platforms with colleagues, clients and service bureaus.




PRECISE CONTROL OF ARTWORK AND TYPE. Create, transform and align elements just the way you want. Adjustable "snap-to" guides and grids make layout design easier. You can even wrap text around any shape or run type along any line.



UNMATCHED COMPATIBILITY. Input from anywhere, output for everywhere. Support for more than 20 image, graphics and text formats, including TIFF, WMF, CDR, PhotoCD,™ GIF89a and MS-Word—plus Adobe PostScript® printing, too.

# AND GET $50 BACK.

Just look what's possible now that new Adobe Illustrator 7.0 for Windows is here. And for a limited time it's as low as $249US *(after $50US mail-in rebate)** if you have CorelDRAW!,™ Adobe Photoshop, Adobe PageMaker, Micrografx® Designer, Macromedia® Freehand,™ Canvas™ or ClarisDraw.® Get it now at your favorite place to buy software. Offer expires 10/15/97. For more information, call 800-649-3875, extension 31915. Or visit <*www.adobe.com/prodindex/illustrator*>.

**Adobe**

If you can *dream* it, you can *do* it.®

*Based on suggested retail price, subject to terms and limitations of rebate. ©1997 Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, Adobe Illustrator, Photoshop, PageMaker, PostScript and "If you can *dream* it, you can *do* it" are trademarks of Adobe Systems Incorporated. Windows is a registered trademark of Microsoft Corporation, Inc. Macintosh is a registered trademark of Apple Computer, Inc., registered in the U.S. and other countries. PhotoCD is a trademark of Eastman Kodak. All other trademarks are the property of the respective owners.

**Circle 32 on reader service card**

# It's the most powerful desktop PC we've ever offered.

# Actually, it's the most powerful desktop PC anyone's ever offered.

pentium® II processor

©1997 NEC Computer Systems Division, Packard Bell NEC, Inc. NEC and PowerMate are registered trademarks of NEC Corporation, both used under license. The Intel Inside logo, LANDesk
respective owners. *Intel's 266MHz Pentium II delivered the best performance based upon *PC Week* 4-7-97 article on desktop PCs.

**NEC PowerMate Professional**

- Intel Pentium II Processor 233 or 266MHz
- 32MB or 64MB EDO RAM standard/expandable to 256MB
- 3.2GB Enhanced IDE Drive or 4.35GB Ultra Wide SCSI hard drive
- 64-bit PCI accelerated 2D and 3D graphics
- Microsoft Windows NT or Microsoft Windows 95
- Intel LANDesk Client Manager
- NEC MagicEye technology
- 3-year limited warranty

We could compare the NEC PowerMate® Professional to ordinary desktops, but that wouldn't be fair. Enhanced by Intel's Pentium® II processor,* the PowerMate desktop is in a class all its own. Of course, we're not simply saying that our new system is extraordinarily powerful. It's extraordinarily manageable as well. With Intel LANDesk® Client Manager and NEC MagicEye™ technology, you'll not only be able to access every desktop throughout your network, you'll also be able to monitor problems before they happen. All without leaving your desk. For greater flexibility, there are Microsoft Windows NT® 4.0 or Windows® 95 models. Given all this, you'll be glad to know that the highest performing PC is available now. Just call **1-888-306-4636** for more information or to find your nearest reseller. Or visit our web site at **www.nec-computers.com.** After all, how can businesses demand speed and efficiency from their people if they can't get it from their computers?

n II are registered trademarks and MMX is a trademark of Intel Corporation. All other trademarks or registered trademarks are property of their

NEC

Circle 180 on reader service card

# Smart Way to Share Statistical Reports Online

UTILITY

YOU NEED TO send a quarterly customer-satisfaction report to your client in 45 minutes, but your boss halfway across the country wants a peek first. You don't have time to fax the 150-page manifesto—but you can use **SPSS Smart Viewer** to post the report on the Web.

This program provides a flexible way to share numerical data and reports with colleagues and customers. (I used a preproduction version.)

List priced at $195, Smart Viewer allows all viewers to rearrange data using the program's pivot-table feature. Pivot tables let you condense mounds of statistical analysis into one table, then slice and dice the numbers.

Once you post a report online, other Smart Viewer users can view and rearrange the included statistics. SPSS also offers a free plug-in called Viewer, which allows someone to view the data but not rearrange it.

Workgroups will benefit most from Smart Viewer. For example, say one colleague wants to know how long customer hold times are, and the national sales manager wants to see if there's a correlation between hold times and sales weaknesses. You can set up the pivot tables, post them online, and send coworkers the bookmarked Web addresses to visit. Or you could send your colleagues to the whole packet of information and let them rearrange it as needed.

Smart Viewer is designed to work with SPSS's statistical package, SPSS for Windows, but it also works with other ActiveX-enabled applications. Pivot tables can be dragged into most presentations or word processing documents.

*—Julie Campagna*

### SPSS Smart Viewer

**PRO:** Allows you to share and rearrange statistics-oriented reports on the Web.

**CON:** Somewhat expensive.

**VALUE:** Good choice for number-crunching workgroups.

**SPSS Inc.**

800/543-2185

www.spss.com

List price: $195

READER SERVICE NO. 747

## QUICK TAKES

### Voice Mail for Web Sites

A plug-in from Digital Equipment gives Web page designers an interesting tool: It lets people record and send voice e-mail from a Web page. Digital's free Voice Plugin, downloadable from its Web site (interface.digital.com/voice), works with Netscape Navigator 3.*x* or Navigator Gold 3.*x*. Visitors to your site download the plug-in and—if they have a microphone—can then record and send voice e-mail to your site or to any address that supports MIME attachments, using Navigator or Messenger e-mail. I found setup somewhat complicated, and audio quality was D-grade at best. But with a bit more work, this could become a useful option for Web pages. Digital Equipment; www.digital.com.

READER SERVICE NO. 748

*—Glenn McDonald*

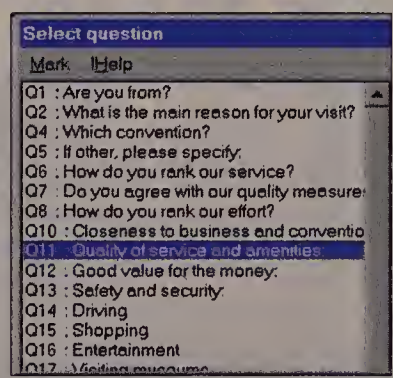
# SurveyWin: An Easy Way to Poll

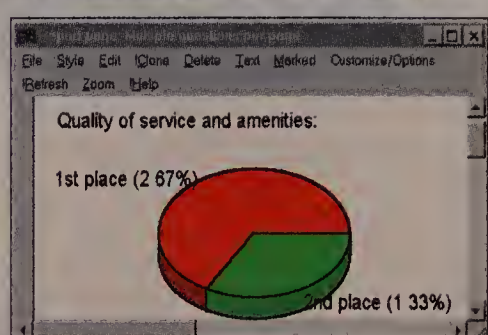
SURVEY

IF YOUR EYES glaze over at the thought of collecting and managing survey data, look into Raosoft's new Windows 3.*x*/95/NT version of **SurveyWin.** Based on my review of a shipping copy, this software is well suited for conducting online or workgroup polls. For example, you could use it to gather customer information or get opinions from colleagues.

SurveyWin's menu-driven interface makes it simple to design the forms that respondents will fill out. You can easily insert Yes/No buttons and fields for multiple-choice and open-ended responses.

The program automatically assigns values to each response and jumps over unrelated questions as respondents progress—so if you're doing a survey about what to serve at the annual awards dinner, vegetarians won't have to ponder meat-related topics.




**SURVEY SAYS: USE SURVEYWIN to easily design and analyze online polls.**

SurveyWin provides several distribution options: A form can be placed on a network, sent as an e-mail message, or exported as an HTML file for use on an intranet or Web site. People can respond via e-mail or store forms in a designated spot on the network.

Then SurveyWin analyzes the data, giving simple statistical information such as averages, minimums, and maximums, as well as more sophisticated analysis. You can use the program to test hypotheses through group comparisons, or compare observed and expected results. It also creates basic 2-D and 3-D graphics.

SurveyWin uses the .dbf format and can import and export common file types such Excel and text only.

At $495, SurveyWin is a bit pricey. Judge the value for yourself with the demo available on Raosoft's Web site.

*—Paul Heltzel* ▶

### SurveyWin

**PRO:** Handles online and group surveys, analyzes data.

**CON:** A bit pricey.

**VALUE:** Good choice if you often use surveys.

**Raosoft**

206/525-4025

www.raosoft.com

Street price: $495

READER SERVICE NO. 749

50ns 16MB EDO SIMMs
$99*

32MB SDRAM DIMMs
$229*

64MB EDO DIMMs
$395*

*High-quality memory upgrades from the name you trust—*

MICRON

# Jump to *Light Speed* with Micron Memory!

Micron RAM upgrades from Crucial Technology can boost your system's performance up to 63%! And that kind of performance boost comes at a low price: a RAM upgrade is the most cost-effective upgrade you can make.

Micron's Crucial Technology offers RAM modules that are 100% compatible with virtually every PC system. Whether you need 30-pin or 72-pin SIMMs, or 72-pin, 168-pin, or 144-pin DIMMs, in standard or EDO versions, we've got what your system needs for light speed performance!

- ✔ **30-day, money-back guarantee**
- ✔ **Lifetime warranty****
- ✔ **Fully illustrated installation guide**
- ✔ **FREE technical support**
- ✔ **FREE FedEx shipping†**

crucial™ TECHNOLOGY
*A division of Micron*

**1-888-363-2570**

Mon-Fri: 7 a.m. to 7 p.m., MST
Sat: 10 a.m. to 2 p.m., MST

VISA MasterCard DISCOVER

Government, school and corporate P.O.'s also accepted

Information available 24 hours a day:
**www.micron.com/crucial**

***We reserve the right to lower our prices at any time so call us or visit our website for latest pricing!***

Crucial Technology, 8000 S. Federal Way, P.O. Box 6, Boise, Idaho 83707-0006, Phone: 208-368-5092 Fax: 208-368-3342, E-mail: crucial.sales@micron.com
*Prices subject to change without notice. Prices indicated are for specific configurations. Call for current pricing. **Refer to the warranty for specific terms and limitations. †In the continental U.S.
©1997, Micron Technology, Inc.

**Circle 56 on reader service card**

# Access Your Desktop PC From Your Palmtop

UTILITY

I USED TO LUG around a notebook PC to check my company e-mail. Then I switched to a pocket-size personal digital assistant that let me write and read e-mail. Now with Symantec's **pcAnywhere CE** software, I can access my entire office desktop PC from the road.

List priced at $79.95, pcAnywhere CE is the first program that lets you remotely access files, applications, and data from a handheld PC. It works with any Windows CE palmtop. (Windows CE is Microsoft's operating system designed just for handheld PCs.)

I tested a preproduction version on the handheld NEC MobilePro 400. While it successfully linked with my office PC (using a modem, a TCP/IP connection, or a direct serial link), I had to resize full-screen images to fit on the small device's display, and this task was not intuitive.

pcAnywhere CE's ezZoom and ezScroll options helped me navigate the host screen on the handheld PC. The zoom feature is a hot-key toggle that alternates between close-up and full-screen views of the desktop monitor.

I easily moved data from my palmtop into desktop applications using a clipboard option. Overall, pcAnywhere CE turns a Windows CE palmtop into a more useful device.

—*Michael S. Lasky*

**PALMTOP WITH A DESKTOP VIEW: pcAnywhere CE is the first remote-access program for Windows CE palmtop computers.**

### pcAnywhere CE

**PRO:** Get into desktop files from your Windows CE palmtop.

**CON:** Resizing the screens can be confusing.

**VALUE:** One-of-a-kind program, worth the money.

**Symantec**
800/441-7234
www.symantec.com
List price: $79.95; $39.95 for existing pcAnywhere users

READER SERVICE NO. 750

QUICK TAKES

## Easy Screen Captures

If you've ever tried to reproduce an image from your monitor by pressing <Print Screen>, then you know that solution leaves much to be desired. For one thing, you'll have to do a lot of cutting and pasting. And it's not easy to use Windows' Paint applet to do fancier tasks like image editing or saving a portion of the screen. ScreenPrint Gold gives you these functions and more. Other utilities, such as TechSmith's $40 SnagIt, also make generating screen shots easy, but the $35 (street price) ScreenPrint Gold offers some very handy extras: a thumbnail viewer, one-click attachment of files to e-mail messages, a simple but useful image editor, and an autotimer that generates screens at 10-second or longer intervals. ScreenPrint does an outstanding job for a reasonable price. Software Labs; 800/569-7900; www.softwarelabs.com/screenprint.

READER SERVICE NO. 751

—*Yardena Arar*

# See the Light: Device Brightens Handheld PCs

GADGET

MOST HANDHELD PC screens are notoriously dark. Backlighting helps, but if you've already bought a costly PDA, you may not be ready to upgrade to a newer backlit model. Also, backlighting gobbles up battery life. But now an add-on solution is available: ASF Associates' **mini-PCL3 Ultimate Palmtop Computer Light.**

It illuminates PDA displays and keyboards using a low-energy, high-intensity bulb that sits in a swiveling, telescoping arm. This gadget also serves as a tiny reading lamp.

The 5-ounce light measures about 3¼ by 2¼ inches and is powered by three AA batteries or an AC adapter. You can position the mini-PCL3 in its desktop stand or use the included Velcro strips to fasten it to the back of your palmtop PC. It folds up easily.

The mini-PCL3 works with most full-size palmtops such as Windows CE handhelds, the Sharp Zaurus, the Psion Series 3c, and Hewlett-Packard units. ASF also offers other models that are suitable for smaller PDAs.

On the downside, the light's plastic housing could be more rugged. And I wish this item cost a bit less—$25 seems a bit steep for what you get.

—*Michael S. Lasky* ▶

**INSTANT BACKLIGHTING: the mini-PCL3.**

### mini-PCL3 Ultimate Palmtop Computer Light

**PRO:** Big improvement for PDAs without backlighting.

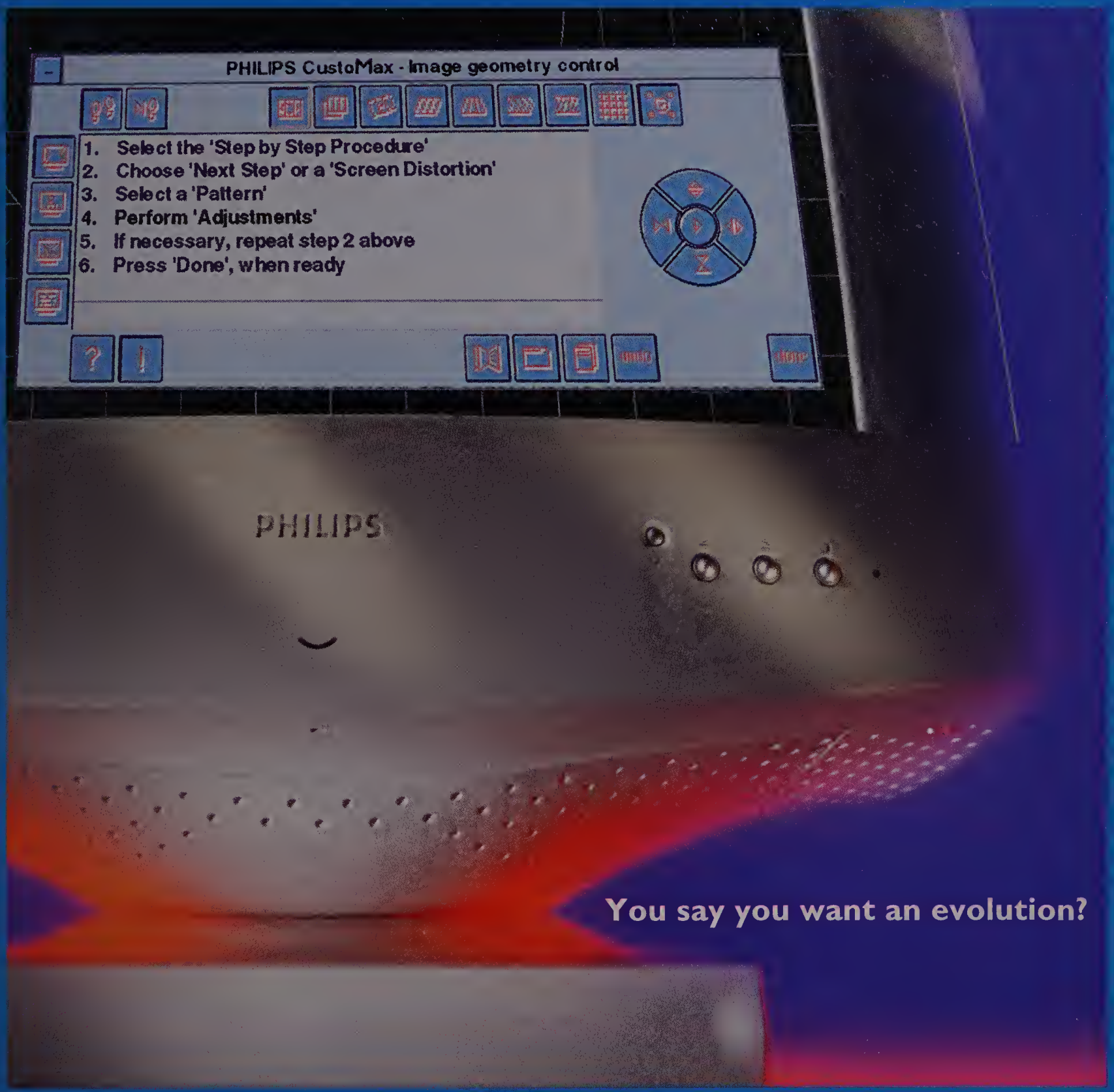
**CON:** Plastic housing is a bit flimsy.

**VALUE:** A little pricey, but useful.

**ASF Associates**
800/936-3638
www.world.std.com/asf1
Street price: $25

READER SERVICE NO. 752

# Introducing the Brilliance Monitors with CustoMax™




**You say you want an evolution?**

You say you want a monitor that makes setting preferences easier? With pop-up windows so you can select and control any adjustment function with your keyboard or mouse? Interactive visual indications for each adjustment? Even test patterns to help find the correct geometry settings? Then you want one of the most highly evolved 15", 17", or 21" monitors anywhere: the Brilliance Monitors with CustoMax™ Screen Adjustment Software. **For details, call 1-800-835-3506 or for faxed information, call 423-521-4341, Request Catalog #000.**

Internet: http://www.philipsmonitors.com

*Let's make things better.*

**PHILIPS**

© 1997 Philips Electronics North America Corporation

**Circle 181 on reader service card**

# Stop Color Scanner Envy: Two Units for Less Than $200

SCANNER HAS A SHORTFALL of funds kept you from gathering your own digitized art or photos for print projects, Web pages, or presentations? You just lost your excuse. New scanners from Microtek and Spot InnoScan let you easily produce high-quality digitized artwork for under $200.

I tested shipping units of both. At $159, Microtek's **Color PageWiz** sets a new low price in its category. It's a good bargain. This compact, lightweight (3.3 pounds) sheetfed scanner produces 24-bit color images at 300 by 600 dots per inch in seconds. Installation is simple with a supplied cable that plugs into your PC's parallel port; a pass-through connector accommodates your printer cable. This setup lets you print scanned images immediately. (If you don't have a bidirectional parallel port, you'll have to change a setting in Windows 95's Device Manager.)

**SCANNING WIZARD: Yes, you can afford a color scanner—Microtek's Color PageWiz works well and costs just $159.**

The Color PageWiz comes with a smart collection of software, including Xerox Pagis SE for document management, the Xerox TextBridge Classic optical character recognition program for turning scanned documents into editable text, and Ulead iPhoto Express for scanning and image editing.

Any sheetfed scanner suffers some compromises. Despite the PageWiz's adjustable paper guides, I found it difficult to get documents straight, and I had to be careful to avoid paper jams. Also, the unit can't scan anything wider than a standard letter. That said, the Color PageWiz is ideal if you want an inexpensive, all-purpose color scanner for pictures and text—at home or in the office.

Spot InnoScan (a subsidiary of MAG InnoVision) offers a cut-rate flatbed scanner, the **FotoTak-6**, that is clearly intended for photos and drawings. It provides 30-bit color and 600-dpi resolution for only $199—an unprecedented price when you consider the FotoTak's features. It even lets you scan slides and transparencies with an included kit whose illuminated lid easily replaces the standard one. (The kit is free through July, $40 thereafter.) The supplied FunScan application suite provides tools for everything from creating T-shirts to manipulating images.

**A BARGAIN: For $199, you won't find another 600-dpi color scanner like the FotoTak-6.**

Limitations? With a scanning area of 5 by 7 inches, the FotoTak-6 is too small for letter-size documents, so it's a poor choice for scanning pages from many books. Installation requires opening your PC to insert an adapter card; one of four supported I/O memory addresses must be free, which might be a problem for a loaded system. But you won't find another scanner like it for the price.

*—Yardena Arar* ▶

### Color PageWiz

PRO: Inexpensive and lightweight, with good software.

CON: The usual sheetfed-scanner gripes.

VALUE: An affordable all-purpose color scanner.

**Microtek**

800/654-4160

www.microtekusa.com

Street price: $159

READER SERVICE NO. 762

### FotoTak-6

PRO: Inexpensive, 600 dpi, slide kit.

CON: Too small for faxing letter-size documents.

VALUE: Excellent price for a high-quality color scanner.

**Spot InnoScan**

800/611-7768

www.spotinc.com

Street price: $199

READER SERVICE NO. 763

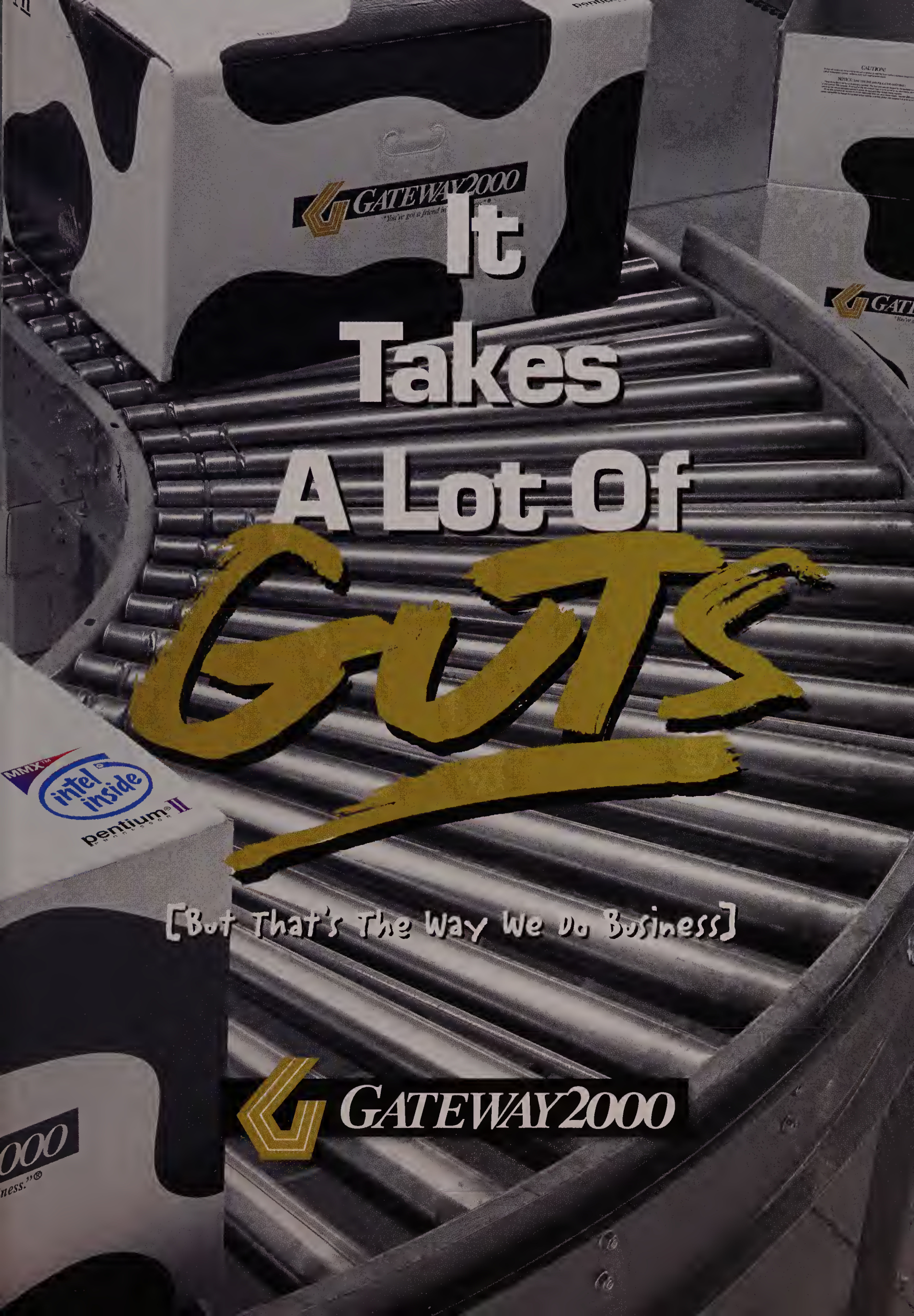
## QUICK TAKES

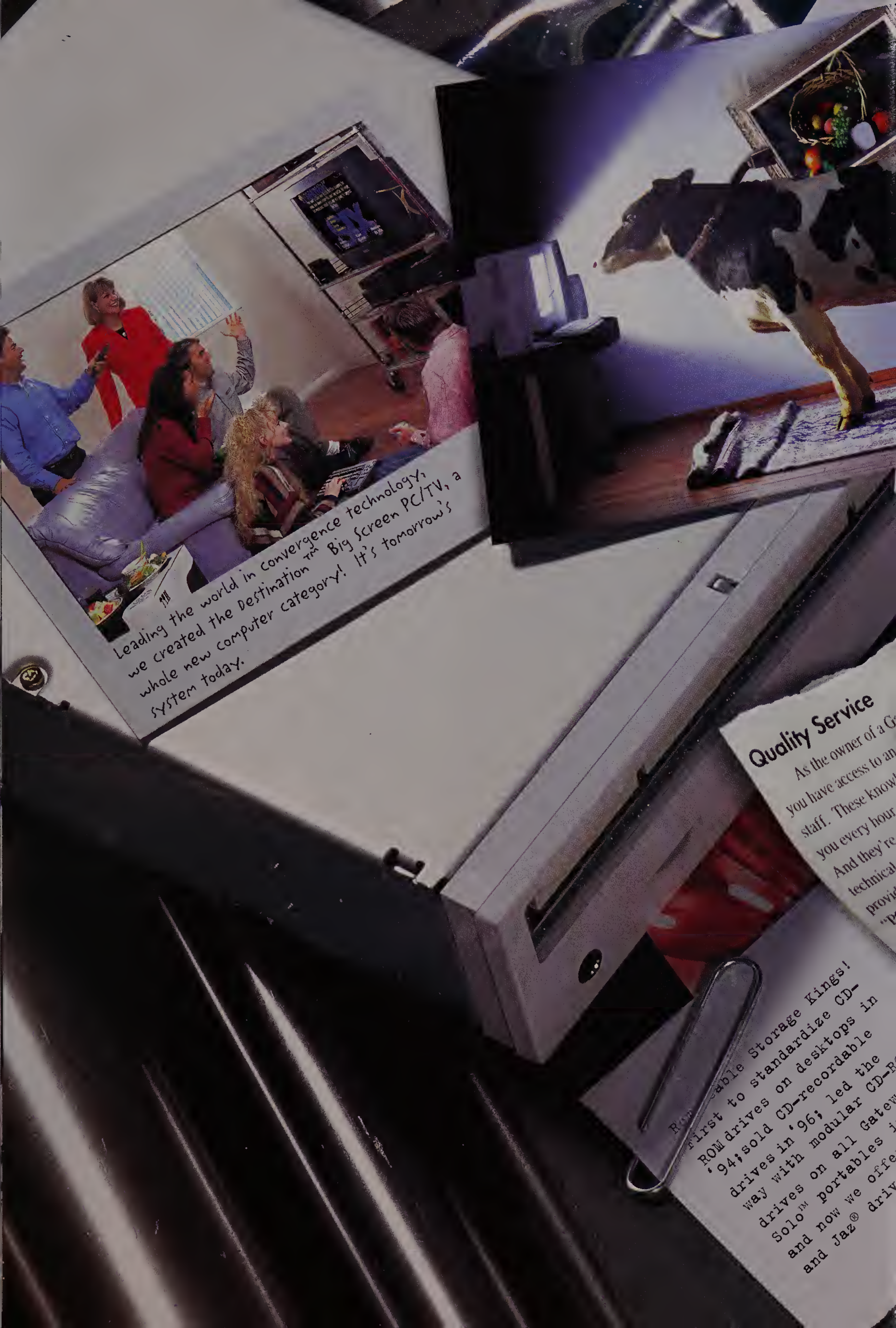
### Handy Surge Protector

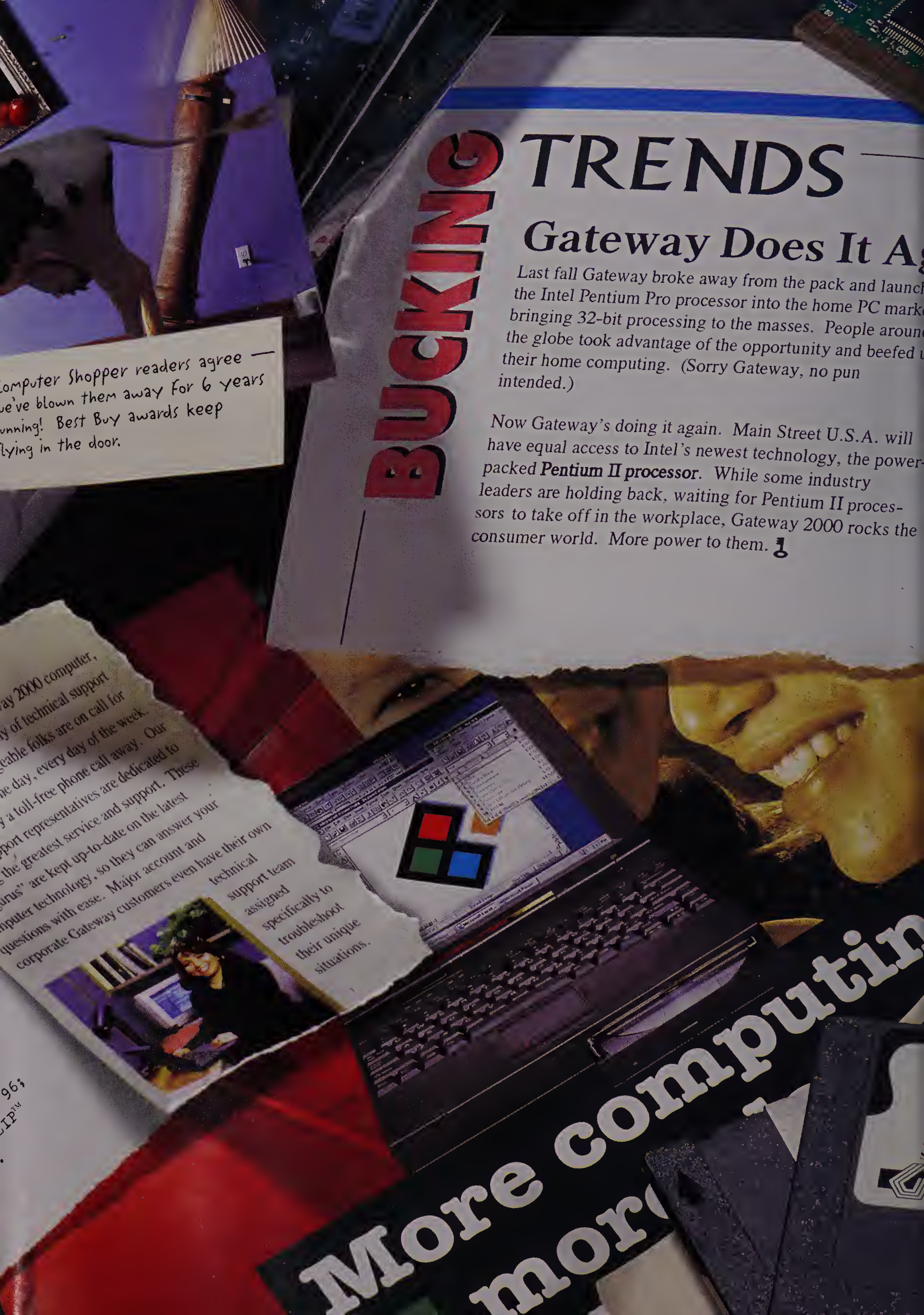
When the lights went out in my neighborhood one night, it didn't seem like such a big deal. But the next morning I found out the electric surge had fried my PC's hard disk, and the cheap strip box I had been using proved to be nothing more than an extension cord. The Kensington SmartSocket would have been welcome. It comes in two models—a strip with six sockets, and a large brick that handles up to six wide AC adapters (box-type plugs) with no overlap. Both models are street-priced at $20 and provide modem and fax protection as well. The $50 premium adapter model with an 8-foot cord handles 1500 joules—that's enough to protect against almost all electrical spikes and surges. Another smart feature: Each socket is color-coded, and an included matching color label lets you identify which device is plugged into each outlet. Kensington; 800/535-4242; www.kensington.com

READER SERVICE NO. 764

*—Michael S. Lasky*


GATEWAY2000
It
Takes
A Lot Of
Guts
[But That's The Way We Do Business]
GATEWAY2000
MMX
intel inside
pentium II


Leading the world in convergence technology, we created the Destination™ Big Screen PC/TV, a whole new computer category! It's tomorrow's system today.
Quality Service
As the owner of a G
you have access to an
staff. These know
you every hour
And they're
technical
provid
"p
Storage Kings!
first to standardize CD-
ROM drives on desktops in
'94; sold CD-recordable
drives in '96; led the
way with modular CD-R
drives on all Gatew
Solo™ portables i
and now we offe
and Jaz® driv


BUCKING
TRENDS
Gateway Does It A
Last fall Gateway broke away from the pack and launc
the Intel Pentium Pro processor into the home PC mark
bringing 32-bit processing to the masses. People aroun
the globe took advantage of the opportunity and beefed
their home computing. (Sorry Gateway, no pun
intended.)
Now Gateway's doing it again. Main Street U.S.A. will
have equal access to Intel's newest technology, the power-
packed Pentium II processor. While some industry
leaders are holding back, waiting for Pentium II proces-
sors to take off in the workplace, Gateway 2000 rocks the
consumer world. More power to them.
omputer Shopper readers agree —
e've blown them away for 6 years
nning! Best Buy awards keep
lying in the door.
ay 2000 computer,
y of technical support
cable folks are on call for
he day, every day of the week.
y a toll-free phone call away. Our
pport representatives are dedicated to
the greatest service and support. These
urus" are kept up-to-date on the latest
mputer technology, so they can answer your
questions with ease. Major account and
corporate Gateway customers even have their own
technical
support team
assigned
specifically to
troubleshoot
their unique
situations.
96;
LIP™
More computin
mor

• Volume 11 • Number 6

# GUTSY COMPANY

## [Blazing New Trails]

At Gateway 2000, we do things differently. Who else would headquarter a computer company in South Dakota? And even though we've grown beyond our Midwestern borders, our prairie heritage is still reflected in our pioneering spirit and dedication to technology and value.

## Technology Pioneers

When we first stampeded onto the computer scene with a national ad starring cows, the phones went crazy and the competition started losing sleep. Gateway's unique blend of technology, quality, service and price were unmatched in the computer industry then, and we've been raising the bar on industry standards ever since. We're committed to bringing you cutting-edge technology. As Intel's new processors have been released (i386, i486, Pentium®, Pentium® Pro, Pentium® with MMX™ technology), Gateway has forged the way, letting you get your hands on the gutsiest technology out there. Now we're doing it again with Pentium® II processors. You don't have to settle for yesterday's technology or wait to be let in on the "secret."

We're also raising mobile computing to new levels with our high-end Gateway Solo™ 9100 multimedia notebook. The flexible modular design, next-generation 13.3-inch XGA display, combo CD-ROM/floppy drive and 4MB video RAM will make you the envy of desktop and portable users alike. It's a no-compromises PC custom built with the latest portable technology, including two 12-cell lithium ion batteries and hard drives that go all the way up to 3GB. Plus, new standard ports like USB and NTSC/PAL In and Out make the Gateway Solo 9100 the ultimate in notebook connectivity.

Gateway has the guts to stand behind this technology with a three-year limited warranty* on desktop PCs, a one-year limited warranty* on portables (optional upgrade to three years), and award-winning telephone service and support 24 hours a day, seven days a week for the life of your system.

## No Compromises

Count on Gateway 2000 for the inside track. Pentium II processors, MMX technology, huge hard drives, x2 technology, and top-of-the-line portable computing — it's all here! The wait is over. Order your dream machine today.

**Please write or call for a free copy.*

MMX™ intel inside pentium® II PROCESSOR

GATEWAY 2000

*"You've got a friend in the business."®*

800-555-2086

www.gateway.com

# GUTSY SYSTEMS

## [Powered By Pentium® II Processors]

No compromises here. Gateway 2000 always has the hottest technology — now it's Intel's next-generation Pentium® II processor. Speeds up to 266MHz dish out high-powered 32-bit performance while extra cache on the processor cranks up the raw horsepower. MMX™ technology punches up your experience, taking MMX technology-enhanced software to levels of performance that will rock your multimedia world. The wait is over! Both MMX technology and the power of 32-bit processing are yours with Pentium II processors. We'll custom build your dream machine with a Pentium II processor *and* all the extras.

**Screaming Modems.** Call for details on how our TelePath® Modem *for Windows*® with x2™ Technology can shift your desktop modem into high gear. Use the pre-installed Internet connectivity and communication applications to get on-line in a flash.

**The future of PC audio today.** It's all or nothing with the G6-266XL, including the stellar Boston Acoustics High-Fidelity 3-Piece Speaker System.

**Cavernous Hard Drives.** The next generation of hard drives — Ultra ATA — has arrived. Ultra ATA efficiently handles data for increased data reliability and improved system performance. Choose the monstrous 6.4GB 10ms Ultra ATA hard drive. Or opt for the big daddy of the hard drive bunch, the 9GB 8.2ms Ultra Wide SCSI-3 drive delivering data at up to 124MB/second burst throughput.

## Powerful Performance

Feed your insatiable appetite for technology. From the monster muscle XL machines to our workhorse systems, we have PCs with guts at a price you can afford. Make no compromises. Call Gateway for your Pentium II processor-based system today!

[This G6-266XL is loaded to the max, including a huge monitor with a 19.7-inch viewable area and the Boston Acoustics® High-Fidelity 3-Piece Speaker system.]

# PENTIUM® II PROCESSOR SYSTEMS

[This is what you've been waiting for!]

## *Gateway G-Series Multimedia PCs with Intel® MMX™ Technology*

### G6-266XL

- Intel® 266MHz Pentium® II Processor with 512K Cache
- 64MB EDO DRAM
- Vivitron®1100 .28mm Screen Pitch Monitor (19.7" viewable area)
- STB® ViRGE™/GX 4MB, 3-D 64-Bit PCI Graphics
- 9GB 8.2ms Ultra Wide SCSI-3 Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- ▸ **TR4 SCSI 4GB Tape Backup Drive**
- Ensoniq® Wavetable Audio
- Boston Acoustics® High-Fidelity 3-Piece Speakers
- TelePath® Modem *for Windows* with x2™ Technology*
- Tower Case
- 104+ Keyboard & MS® IntelliMouse™
- Microsoft® Windows® 95 & MS Office 97, Small Business Edition plus Encarta® 97◆
- MMX™ Technology-Enhanced Software◆◆
- Gateway Gold™ Premium Service & Support for Desktop PCs

**$4999** As low as× $174/mo.

### G6-266M

- Intel 266MHz Pentium II Processor with 512K Cache
- 64MB EDO DRAM
- CrystalScan®700 .28dp Monitor (15.9" viewable area)
- STB ViRGE/GX 4MB, 3-D 64-Bit PCI Graphics
- 6.4GB 10ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- ▸ **Iomega® Internal ZIP™ Drive**
- Ensoniq Wavetable Audio
- Altec™ Lansing ACS-410 & ACS-251 Speakers
- TelePath Modem *for Windows* with x2 Technology*
- Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- MMX Technology-Enhanced Software◆◆
- Gateway Gold Service & Support for Desktop PCs

**$3349** As low as× $116/mo.

### G6-233M

- Intel 233MHz Pentium II Processor with 512K Cache
- 32MB EDO DRAM
- CrystalScan700 .28dp Monitor (15.9" viewable area)
- STB ViRGE/GX 4MB, 3-D 64-Bit PCI Graphics
- 3.2GB 12ms Ultra ATA Hard Drive
- 12X min/24X max CD-ROM & 3.5" Diskette Drives
- Ensoniq Wavetable Audio
- Altec Lansing ACS-41 Speakers
- TelePath Modem *for Windows* with x2 Technology*
- Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- MMX Technology-Enhanced Software◆◆
- Gateway Gold Service & Support for Desktop PCs

**$2649** As low as× $92/mo.

## *Gateway G-Series Professional PCs with Intel MMX Technology*

### G6-266

- Intel 266MHz Pentium II Processor with 512K Cache
- 64MB EDO DRAM
- CrystalScan700 .28dp Monitor (15.9" viewable area)
- STB ViRGE/GX 4MB, 3-D 64-Bit PCI Graphics
- 6.4GB 10ms Ultra ATA Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- Gateway Gold Service & Support for Desktop PCs

**$2999** Business Lease† $110/mo.

### G6-233

- Intel 233MHz Pentium II Processor with 512K Cache
- 32MB EDO DRAM
- CrystalScan700 .28dp Monitor (15.9" viewable area)
- 2MB 3-D 64-Bit PCI Graphics
- 3.2GB 12ms Ultra ATA Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- Gateway Gold Service & Support for Desktop PCs

**$2499** Business Lease† $92/mo.

## *Gateway Destination™ Big Screen PC/TVs with Intel MMX Technology*

### D6-266

- Intel 266MHz Pentium II Processor with 512K Cache
- 64MB EDO DRAM
- Destination 31" VGA Monitor
- STB 2MB Graphics Accelerator w/ Cable-Ready TV Tuner
- 6.4GB 10ms EIDE Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- ▸ **EasyPhoto Drive™ Photo Scanner**
- Ensoniq Wavetable Audio
- ▸ **harman/kardon® High-Fidelity Sound System**
- TelePath Modem *for Windows* with x2 Technology*
- 7-Bay Charcoal-Colored PC Case
- Wireless Keyboard w/ Integrated EZ Pad® Pointing Device
- Wireless Field Mouse® Remote
- MS Windows 95
- Destination Software Collection
- MMX Technology-Enhanced Software◆◆
- Gateway Gold Premium Service & Support° for Big Screen PC/TVs

**$4499** As low as× $156/mo.

### D6-233

- Intel 233MHz Pentium II Processor with 512K Cache
- 32MB EDO DRAM
- Destination 31" VGA Monitor
- STB 2MB Graphics Accelerator w/ Cable-Ready TV Tuner
- 6.4GB 10ms EIDE Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- Ensoniq Wavetable Audio
- ▸ **harman/kardon High-Fidelity Sound System**
- TelePath Modem *for Windows* with x2 Technology*
- 7-Bay Charcoal-Colored PC Case
- Wireless Keyboard w/ Integrated EZ Pad Pointing Device
- Wireless Field Mouse Remote
- MS Windows 95
- Destination Software Collection
- MMX Technology-Enhanced Software◆◆
- Gateway Gold Service & Support° for Big Screen PC/TVs

**$3999** As low as× $139/mo.

GATEWAY2000 **EASYPAY**

LOW MONTHLY PAYMENTS

*Call for details about how you can receive Quicken® Deluxe 6.0.*

**Maximum data transfer rate dependent on certain variables including particular modems with which you are communicating, telephone lines, communications software and communications protocols.*

*◆MS Office 97, Small Business Edition plus Encarta 97 includes MS Word 97, Excel 97, Publisher 97, Automap® Streets, Small Business Financial Manager and Outlook™ 97.*

*◆◆MMX Technology-Enhanced Software Bundle includes POD™, Eraser™– Turn About, The Ultimate Human Body Version 2.0, and The Third Dimension™.*

*×Financing available on approved credit issued and administered by MBNA America® Bank, N.A. Payments based on 36-month term at an Annual Percentage Rate as low as 14.9%.*

*°The Destination 31" monitor is covered by a one-year limited warranty. Call or write for a free copy.*

*†Leasing arranged by independent leasing companies to qualified commercial customers. Lease payments based on 36-month term. Lease terms subject to change without notice or obligation.*

MMX™ intel inside pentium® II PROCESSOR

GSA Schedule #GS-35F-4565G

GATEWAY2000

"You've got a friend in the business."

800-555-2086

www.gateway.com

# OTHER GUTSY SYSTEMS

[Expect more from Gateway and get it!]

## Gateway G-Series Multimedia PCs with Intel® MMX™ Technology

### G5-200M

- Intel® 200MHz Pentium® Processor with MMX™ Technology
- 32MB Synchronous DRAM
- 512K Pipelined Burst Cache
- CrystalScan®700 .28dp Monitor (15.9" viewable area)
- 2MB 3-D 64-Bit PCI Graphics
- 3.2GB 12ms EIDE Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- Ensoniq® Wavetable Audio
- Altec™ Lansing ACS-41 Speakers
- TelePath® Modem *for Windows* with x2™ Technology*
- Mid-Tower Case
- 104+ Keyboard & MS® IntelliMouse™
- Microsoft® Windows® 95 & MS Office 97, Small Business Edition plus Encarta® 97◆
- MMX Technology-Enhanced Software◆◆
- Gateway Gold™ Service & Support for Desktop PCs

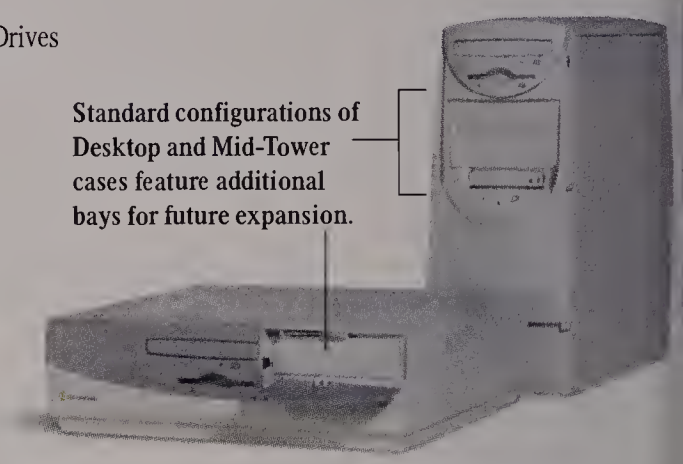
**$2399** As low as✗ $84/mo.

### G5-166M

- Intel 166MHz Pentium Processor with MMX Technology
- 16MB Synchronous DRAM
- 256K Pipelined Burst Cache
- CrystalScan500 .28dp Monitor (13.9" viewable area)
- 2MB 3-D 64-Bit PCI Graphics
- 1.6GB 12ms EIDE Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- 16-Bit GATEWAY™ Audio
- Altec Lansing ACS-41 Speakers
- TelePath Modem *for Windows* with x2 Technology*
- Desktop Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- MMX Technology-Enhanced Software◆◆
- Gateway Gold Service & Support for Desktop PCs

**$1749** As low as✗ $63/mo.

*Please call for other configurations. We custom build each GATEWAY 2000® system to your specifications.*



Standard configurations of Desktop and Mid-Tower cases feature additional bays for future expansion.

## Gateway G-Series Professional PCs

### G6-200²

- Intel 200MHz Pentium® Pro (Dual-Processor Ready)
- 64MB EDO ECC Memory
- 256K Internal Cache
- CrystalScan700 .28dp Monitor (15.9" viewable area)
- 4MB 3-D 64-Bit PCI Graphics
- 4GB 8ms Ultra Wide SCSI-3 Hard Drive
- 12X SCSI CD-ROM & 3.5" Diskette Drives
- APC® Back-UPS Pro 650®
- Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows NT® 4.0 & MS Office 97, Small Business Edition plus Encarta 97◆
- Gateway Gold Service & Support for Desktop PCs

**$3849** Business Lease† $141/mo.

### G5-200

- Intel 200MHz Pentium® Processor
- 32MB Synchronous DRAM
- 256K Pipelined Burst Cache
- CrystalScan700 .28dp Monitor (15.9" viewable area)
- 2MB 3-D 64-Bit PCI Graphics
- 3.2GB 12ms EIDE Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- Mid-Tower Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- Gateway Gold Service & Support for Desktop PCs

**$1999** Business Lease† $74/mo.

### G5-166

- Intel 166MHz Pentium Processor
- 16MB Synchronous DRAM
- 256K Pipelined Burst Cache
- CrystalScan500 .28dp Monitor (13.9" viewable area
- 2MB 3-D 64-Bit PCI Graphics
- 1.6GB 12ms EIDE Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- Desktop Case
- 104+ Keyboard & MS IntelliMouse
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- Gateway Gold Service & Support for Desktop PCs

**$1599** Business Lease† $59/mo.

## Destination™ PC/TV

### D5-166

- Intel 166MHz Pentium Processor with MMX Technology
- 32MB Synchronous DRAM
- 256K Pipelined Burst Cache
- Destination 31" VGA Monitor
- STB® 2MB Graphics Accelerator w/ Cable-Ready TV Tuner
- 3.2GB 12ms EIDE Hard Drive
- 12X min/16X max CD-ROM & 3.5" Diskette Drives
- Ensoniq Wavetable Audio
- Boston Acoustics® MicroMedia™ 3-Piece Speaker System
- TelePath Modem *for Windows* with x2 Technology*
- 7-Bay Charcoal-Colored PC Case
- Wireless Keyboard w/ Integrated EZ Pad® Pointing Device
- Wireless Field Mouse® Remote
- MS Windows 95
- Destination Software Collection
- MMX Technology-Enhanced Software◆◆
- Gateway Gold Service & Support° for Big Screen PC/TVs

**$2999** As low as✗ $104/mo.

## Gateway Solo™ Portable PCs

### 9100XL

- 13.3" XGA Active Matrix Color Display
- Intel 166MHz Pentium Processor with MMX Technology
- 64MB SDRAM
- 256K Pipelined Burst Cache
- 4MB Video RAM
- Modular Combo CD-ROM & 3.5" Diskette Drive
- USB & Zoomed Video Ports
- NTSC/PAL Video Input & Output
- 3GB Hard Drive
- 16-Bit Wavetable Sound & Stereo Speakers
- 33.6 PCMCIA Data*/14.4 Fax Modem
- Two 12-Cell Li-Ion Batteries & AC Pack
- 88-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Deluxe Carrying Case
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- Gateway Gold Service & Support for Portable PCs

**$5999** As low as✗ $208/mo.

### 2200SE

- 12.1" SVGA Active Matrix Color Display
- Intel 166MHz Pentium Processor with MMX Technology
- 32MB EDO DRAM
- 256K Pipelined Burst Cache
- 2MB EDO Video RAM
- Modular CD-ROM Drive
- Modular 3.5" Diskette Drive
- Zoomed Video Port
- NTSC/PAL Video Output
- 2GB Hard Drive
- 16-Bit Wavetable Sound & Stereo Speakers
- Lithium Ion Battery & AC Pack
- 85-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Carrying Case
- MS Windows 95 & MS Office 97, Small Business Edition plus Encarta 97◆
- Gateway Gold Service & Support for Portable PCs

**$3849** As low as✗ $134/mo.

### 2100LS

- 11.3" SVGA DSTN Color Display
- Intel 120MHz Pentium Processor
- 16MB EDO DRAM
- 256K Pipelined Burst Cache
- 1MB EDO Video RAM
- Modular CD-ROM Drive
- Modular 3.5" Diskette Drive
- Zoomed Video Port
- 1GB Hard Drive
- 16-Bit Sound & Stereo Speakers
- NiMH Battery & AC Pack
- 85-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Carrying Case
- MS Windows 95
- MS Works 95
- Gateway Gold Service & Support for Portable PCs

**$1999** As low as✗ $70/mo.

# GUTSY UPGRADES *(Sold only with the purchase of a system.)*

## Desktop Upgrades

- **Altec™ Lansing ACS-251 Subwoofer $75**
- **Altec Lansing ACS-410 Dolby® Surround Sound Speaker System w/ ACS-251 Subwoofer $120**
  *(upgrade from PCs that include Altec ACS-41 speakers)*
- **Iomega® Ditto™ 3200 Internal Tape Backup Unit $199**
  3200MB with compression, nominal 1600MB
- **Iomega Internal ZIP™ 100MB Drive $139**
  *(includes three 100MB cartridges)*
- **Iomega External ZIP 100MB Drive $159**
- **Iomega Jaz® 1GB Drive $429**
  *(includes SCSI controller and 1GB cartridge)*
- **MS® Windows NT® 4.0 Upgrade $99**
  *(upgrade from PCs that include MS Windows® 95)*

## Portable PC Upgrades

- **Gateway Solo™ Mini Docking Station $199**
- **Gateway Solo Docking Station $599**
- **33.6 Data**/14.4 Fax Modem $200**
- **Extra Lithium Ion Battery $190**

## Destination™ Big Screen PC/TV Upgrades

- **harman/kardon® High-Fidelity Sound System**
  Seven-piece Dolby Pro Logic® Surround Sound speaker system including AVR-10 audio/video receiver with remote, subwoofer, center channel, and four satellites for the ultimate multimedia audio experience. **$599**
- **EasyPhoto Drive™ Photo Scanner Upgrade $149**
- **Additonal Destination 31-Inch VGA Color Monitor $999**
  *(Call for details.)*

## Service & Support for Desktop Systems

***GATEWAY GOLD™***
*PREMIUM*

Extended Three-Year On-Site Agreement†† including priority 800 number for access to technical experts.

- At time of system purchase **$99**
- Within current on-site service agreement **$129**

For our complete line of software and peripherals call GATEWAY™ component add-on sales at 800-846-2080.
Sales Hours: 7am-10pm Weekdays (CT).

**Maximum data transfer rate dependent on certain variables including particular modems with which you are communicating, telephone lines, communications software and communications protocols*

††*On-site service is available to most locations in the continental United States, Alaska, Hawaii, Puerto Rico and Canada after you and your Gateway technician determine an on-site visit is necessary. On-site service is provided by PC Technology Services, Inc. On-site is not available for any monitor, mouse, keyboard, or portable system. Write or call for a free copy of the on-site service agreement.*

# GUTSY EXTRAS *(Available to existing customers and new Gateway customers with system purchase.)*

***GATEWAY SELECT***

Our Gateway Select program lets you know you're getting software that meets or exceeds our standards for quality, value and ease of use.

## Software

- **Games & Entertainment Pack II** Includes Bug!™; Deadlock™; MechWarrior® 2: Mercenaries™; 9™; Pitfall: The Mayan Adventure®; SPQR: The Empire's Darkest Hour™; and PC ProPad gaming device. **$99**
- **Finance Pack II** *(U.S. Shipment Only)* Includes Quicken® Deluxe 6, Quicken Financial Planner™ 2, Quicken Family Lawyer™ 7, and Quicken Parents' Guide to Money.™ **$69**
- **Kid's BackPack™ IV**
  Includes Math Blaster®: In Search Of Spot, Freddi Fish™ And The Case Of The Missing Kelp Seeds,™ Pajama Sam™ In "No Need To Hide When It's Dark Outside,"™ Just Me And My Mom™, and Muppet Treasure Island™. **$59**

## Extras

- MS SideWinder™ 3D Pro Joystick **$59**
- APC® Back-UPS® Office **$149**
- APC Back-UPS Pro 650 **$329**
- Epson® PhotoPlus™ Color Photo Scanner **$199**
- Epson PhotoPC™ 500 Digital Camera **$499**
- Visioneer™ PaperPort Vx™ Scanner **$249**

## Printers *(Each printer includes cable and ink cartridge.)*

- Epson Stylus® Color 400 Ink Jet Printer **$229**
- Epson Stylus Color 600 Ink Jet Printer **$299**
- Epson Stylus Color 800 Ink Jet Printer **$449**
- Hewlett®-Packard DeskJet 694C Color Printer **$299**
- Hewlett-Packard DeskJet 820Cse Color Printer **$349**
- Hewlett-Packard LaserJet 6P Laser Printer **$749**

GATEWAY2000
*"You've got a friend in the business."®*

**800-555-2086**

www.gateway.com

MMX™ intel inside pentium® PROCESSOR

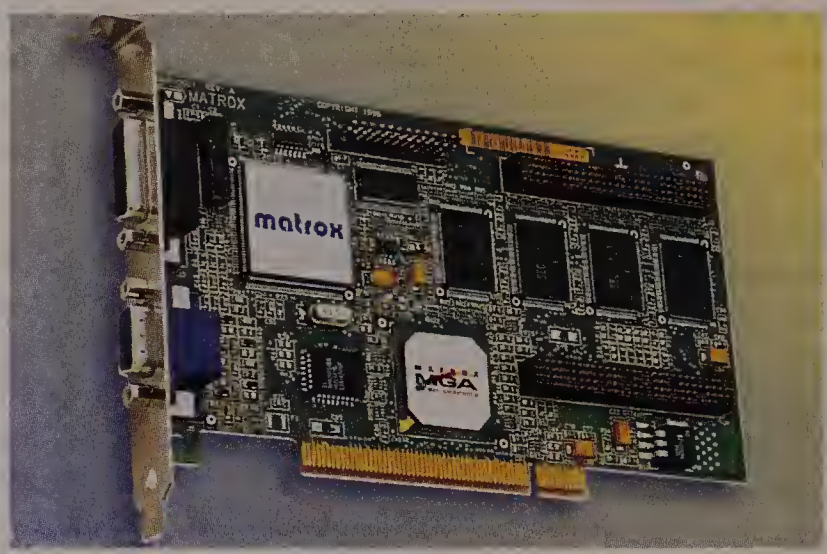
610 Gateway Drive • P.O. Box 2000 • N. Sioux City, SD 57049-2000 • Phone 605-232-2000 • TDD 800-846-1778 • Fax 605-232-2023
FaxBack 800-846-4526 • International FaxBack Access 605-232-2561 • Component Add-On Sales 800-846-2080 • Sales Hours: 7am-10pm Weekdays, 8am-8pm Saturdays & Sundays (CT)

© 1997 Gateway 2000, Inc. GATEWAY 2000, CrystalScan, black-and-white spot design, EZ Pad, Field Mouse, "G" logo, TelePath, Vivitron and "You've got a friend in the business" slogan are registered trademarks, and Destination, GATEWAY, Gateway Gold, Kid's BackPack and Gateway Solo are trademarks of Gateway 2000, Inc. The Intel Inside Logo, Intel and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. ViRGE is a trademark of S3. All other brands and product names are trademarks or registered trademarks of their respective companies. All prices and configurations are subject to change without notice or obligation. Prices do not include shipping or applicable sales tax. Many Gateway 2000 products are custom engineered to Gateway 2000 specifications, which may vary from the retail versions of the software and/or hardware in functionality, performance or compatibility. *Financing available on approved credit issued and administered by MBNA America® Bank, N.A. Payments based on 36-month term at an Annual Percentage Rate as low as 14.9%. †Leasing arranged by independent leasing companies to qualified commercial customers. Lease payments based on 36-month term. Lease terms subject to change without notice or obligation.

# Matrox Graphics Card for Professionals: The Next Millennium Comes Early

GRAPHICS

GRAPHICS professionals or anyone who needs to view their work on large monitors at high resolutions will appreciate the **Matrox Millennium II** graphics board. It works extremely quickly in Windows 95 programs, even at resolutions of 1024 by 768 and higher. In fact, the Millennium II supports the 1800 by 1440 resolution of the newest and most sophisticated 21-inch monitors.




**SPEEDING TICKET: Matrox's new Millennium II board helps a PC make fast work of 2-D and 3-D graphics at high resolutions.**

The Millennium II is a good choice for people doing CAD or 3-D animation work. The board uses "scatter-gather" bus mastering, which lets it carry out 3-D commands while the CPU performs other calculations. It also supports a 32-bit Z buffer, which adds detailed depth to 3-D models. During informal testing of a shipping version, the Millennium II handled complex 3-D scenes at top speeds.

The new Millennium board has an improved video playback engine and is highly upgradable. The 4MB version goes for $399; pricing for an 8MB version was not set at press time. For professionals who need this type of power, it's money well spent.

—*Brad Grimes*

### Matrox Millennium II

**PRO:** Fast 2-D and 3-D acceleration, excellent performance even at high resolutions.

**CON:** Expensive.

**VALUE:** Worth the money for graphics professionals.

**Matrox Graphics**

800/317-2348

www.matrox.com/mga

Street price: $399

READER SERVICE NO. 765

## QUICK TAKES

### Inexpensive Graphics Boost

If you want to turn your Pentium PC into a graphics workstation without spending big bucks, you need something like the new Diamond Multimedia Fire GL 1000 3-D accelerator. For $300—about half of what workstation-class boards usually cost—the Diamond board helps you create 3-D animations, virtual worlds, and computer-aided designs. It supports the major application programming interfaces (OpenGL, Heidi, and Direct3D) and comes with Macromedia's Extreme 3D and Integrated Data Systems' V Realm Builder. The board comes with 4MB of SGRAM. Diamond Multimedia; 800/468-5846; www.diamondmm.com

READER SERVICE NO. 767

—*Brad Grimes*

# Inexpensive Way To Capture, Share Video Clips

VIDEO CAPTURE

UNTIL NOW, capturing full-motion video clips has required costly capture boards that were often tricky to install and use. Not so with the $229 **Alaris QuickVideo Transport**. You attach the device, which is about the size of a television's remote control, to your PC's parallel port. You're then ready to capture video from any NTSC/PAL video source, such as a camcorder, TV, or VCR. Once the video clip is saved on your PC, you use the included Videogram Creator software to compress it.

I saw some amazing compression ratios with the preproduction unit I tested. In one instance I compressed a 273MB video clip down to 1.4MB—small enough to fit on a floppy disk. Keep in mind, though, that video clips are huge: You might get only 60 seconds of video with sound on a floppy.

Compressed "videograms" are ideal for posting on a company Web site, distributing on CD-ROM for training purposes, or sending through e-mail. With the 100K video player you can embed into the videogram file, the recipients don't need special software to view your clip—and they can see it immediately.

Bear in mind that we're not talking professional-looking video here. The QuickVideo Transport captures in AVI format at 320 by 240 resolution; frequently, the playback is a bit choppy, and the audio and video are not always synchronized. But for those quick-and-dirty situations where video will help you make your point, this device is ideal. A bundled copy of CU-SeeMe also allows you to use the Alaris QuickVideo Transport to do basic videoconferencing.

—*Brad Grimes* ▶

### Alaris QuickVideo Transport

**PRO:** Inexpensive, easy to set up and use.

**CON:** No pass-through port for your printer.

**VALUE:** An affordable way to capture and share video clips.

**Alaris**

800/317-2348

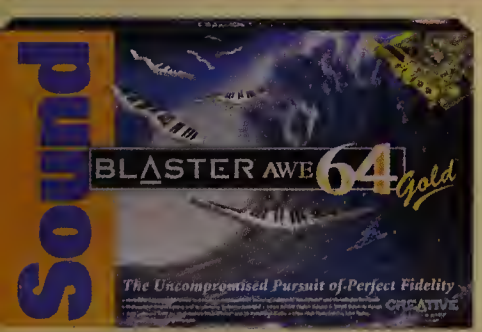
www.alaris.com

List price: $229

READER SERVICE NO. 766

# AWE 64

## SOUNDS OF THE *Symphony*




Experience an evening at the symphony with the new Sound Blaster® AWE64 Gold™ and hear every crisp sound with perfect audio fidelity. The Sound Blaster AWE64 Gold is simply the best sounding Sound Blaster ever. And it's designed specifically to upgrade your PC's multimedia audio system. Play back up to 64 simultaneous voices, producing a richer, fuller sound than previously thought possible. With 20-bit digital output, audio quality is uncompromised. And of course, compatibility is assured because it's a genuine Sound Blaster. To listen to and learn more about the Sound Blaster AWE64 Gold contact us at:

**www.SoundBlaster.com/sound/AWE64Gold.**

CREATIVE®
WWW.SOUNDBLASTER.COM

© Copyright 1997 Creative Technology Ltd. Sound Blaster and the Creative logo are registered trademarks and AWE64 Gold, Creative WaveSynth/WG and E-mu 3D Positional Audio are trademarks of Creative Technology Ltd. All other names are property of their respective owners. All specifications are subject to change without prior notice. All rights reserved.

**Circle 54 on reader service card**

1. Maestro Tapping Baton.
2. Piano Keys Dancing.
3. Entrance Of An Oboe.
4. Crashing Cymbals.
5. Violin Vibrato.
6. "Bravo, Bravo!"
7. Deep, Rythmic Grooves of a Cello.
8. Clarinet Scaling Octaves.
9. Audience Shuffling In.
10. Appreciative Applause.
11. Chord Progressions On Grand Piano.
12. Soft Strokes Of Harp Strings.
13. Chiming Triangle.
14. "Shhhhhhhhh..."
15. A Cymbal Brushing Lightly.
16. Cascading Clarinet.
17. Flute Solo.
18. Crescendo.
19. Playful Flirtation Of A Piccolo.
20. Boom Of A Tuba.
21. Pager Beeping.
22. Loud Clapping.
23. Low Tones Of A Stand-Up Bass.
24. Violin And Viola En Duet.
25. Piano Sonata.
26. Wailing Saxophone.
27. Smooth Slide Of A Trombone.
28. Exclamation Of A Trumpet.
29. Rolling Thunder Of A Timpani.
30. Arpeggio On The Violin.
31. The Reed Section.
32. Pages Of Sheet Music Turning.
33. Piano Playing Minuet In G.
34. Drum Keeping Tempo.
35. Violin Staccato.
36. Tambourine Jingle.
37. Clicking Castanets.
38. Relentless Beating of Drums.
39. Regal Sound Of A French Horn.
40. Snare Drum Rattling.
41. Xylophone Resonating.
42. The Low Pitch Of A Bassoon.
43. Cello Staccato.
44. Pulsating Viola.
45. Viol D'Orchestre.
46. Flute Ensemble.
47. Fluttering Of A Flute.
48. Regimental Sound Of A Bugle.
49. Plucking Of A Violin.
50. "Encore! Encore!".
51. Orchestra Tuning Up.
52. Silence Between Passages.
53. Harmonic Wind From A Flute.
54. Oboe Solo.
55. Soft Snoring.
56. Decrescendo.
57. Beethoven's 5th.
58. Throats Clearing.
59. Chopsticks.
60. Sounds Of Intermission.
61. Brass Solo.
62. Rattling Of Maracas.
63. "Wake Up, Honey, It's Over."
64. The Final Movement.

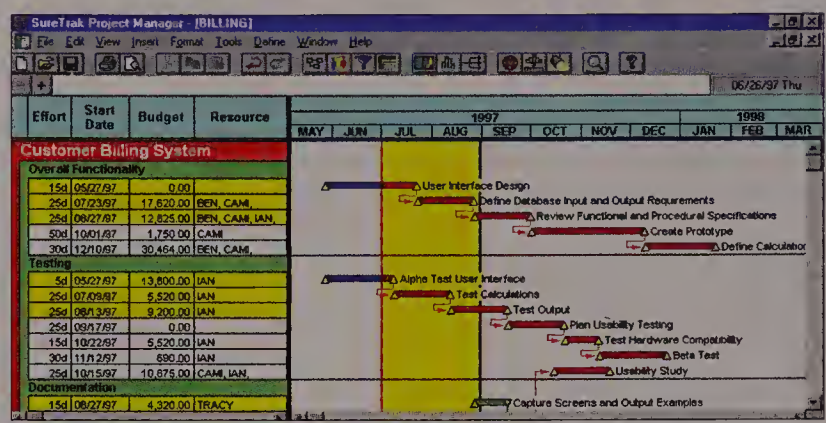
# SureTrak 2.0: Easier Project Management

M B A - W A R E

NO ONE I KNOW finds project management software easy to use—and if it's not easy, it defeats the whole purpose. But Primavera's **SureTrak 2.0** actually does the job, based on the beta version I tested. Expected to sell for $399, the new version of SureTrak adds helpful features, including an animated tutorial, wizards that simplify complicated tasks, HTML publishing for Web-based reports, and e-mail updates for team members.

I started my work with the Project Kickstart Wizard, which handles the basics of the planning process. I had to fill in the details, but I was able to create a framework for my project easily. (With other packages, this is often the most difficult part of the process.) A new form made explaining activities a simple task. And as I started assigning resources, I appreciated the flexibility to assign staff projects in hours without the convoluted "percent of availability" work-around I've had to use with other project management products.

The program also allows flexibility as the project progresses. For instance, pausing a project and giving it a new starting date later, or adjusting the duration and the due date for a certain task, are simple with SureTrak. These features help keep the plan accurate.




**PROJECT AN ORGANIZED IMAGE: SureTrak 2.0 enables you to manage group projects effectively and chart their progress.**

I've had projects suffer because of poor communication, so I liked SureTrak's ability to send and receive updates, screen snapshots, and other tidbits through e-mail. The package includes the Primavera Post Office, a sharable applet for remote viewing and updating of project tasks and assignments. It's a slick way to check on project status and keep team members—even those who don't have their own copies of SureTrak—apprised of which tasks and deadlines they own. You can also send a compressed version of the entire project file, to be opened only by another SureTrak user. It's a clever safety feature.

In addition, SureTrak 2.0 lets you export and import projects in Excel's pivot table format, and you can use a Web publishing wizard for exporting project reports in HTML format. That's handy for company intranets.

All in all, SureTrak 2.0 is worth considering.

*—Matthew Leeds*

**Primavera SureTrak 2.0**

**PRO:** Useful on-screen help; e-mail and Web features.

**CON:** Not cheap.

**VALUE:** Good choice for time-pressed managers.

**Primavera Systems**
800/973-1335,
610/667-8600
www.primavera.com
Street price: $399

READER SERVICE NO. 768

# HotDocs Pro Helps Create Forms in Minutes

F O R M S

CREATING TEMPLATES in a word processing application is tricky unless you're pretty good with macro languages. Creating forms requires something like a miracle. That's where **HotDocs Pro for Windows 95** comes in—it's the newest member of Capsoft's HotDocs line of document-assembly software. HotDocs Pro can automate the process of creating often-used forms and documents, including memos, purchase orders, contracts, leases, and price quotes. The program not only guides you through the process of building text-based templates, but it also automates graphical forms, even ones with multiple fields or check boxes. I tested a shipping copy.

Starting work on an existing form is simple, as long as it's in a format that Windows can print. Just output the form using the HotDocs Automator printer driver, and it becomes a HotDocs form. Now you can use the software's customization features to make the form easy for your coworkers to use.

For instance, you can create interactive dialog boxes that lead a person through the process of filling out the form. Certain fields in a dialog box can have scripts attached: The scripts read the information entered, then lead to the appropriate next step—or prevent a person from giving incorrect information.

Not everyone in your office needs the $399 HotDocs Pro package to use the forms and templates you create. HotDocs 4.0, which lists for $99, lets anyone work with forms created in the Pro version. Both products are worth the money.

True macro mavens can save their money and create homemade forms, but those of us who don't have the time will appreciate HotDocs Pro.

*—Brad Grimes* ▶

**HotDocs Pro for Windows 95**

**PRO:** Easily create templates and custom forms.

**CON:** Card-carrying macro experts can pass.

**VALUE:** A smart time-saver.

**Capsoft Development Corp.**
800/500-3627
www.capsoft.com
List price: $399

READER SERVICE NO. 769

# AWE 64

## SOUNDS OF INVASION

1. "We Come In Peace."
2. Blasting Ray Guns.
3. People Screaming.
4. "You Must Believe Me!"
5. Exploding Buildings.
6. Whirring Space Ships.
7. Brains Being Sucked.
8. Bones Crunching.
9. Aliens Phoning Home.
10. Metallic Scraping.
11. Cars Crashing.
12. Kidneys Bursting.
13. Insertion of Probes.
14. Heads Exploding.
15. "Run for Cover!"
16. "Warning."
17. Aliens Melting.
18. Pods Hatching.
19. Destroying the Monster.
20. Buildings Imploding.
21. Spaceships Docking.
22. Boiling Flesh.
23. "Mayday, Mayday!"
24. Exploding Spaceship.
26. "I saw a UFO!"
27. Planes Taking Off.
28. "We're at DefCon 1."
29. Aliens Communicating.
30. Children Crying.
31. Slurp.
32. Clink of Autopsy Instruments.
33. Laser Swords Crashing.
34. "Hyperspace!"
35. Flesh Being Torn Off Bones.
36. "They're Coming."
37. Wailing Sirens.
38. "You Must Die."
39. "Beam Me Up."
40. Zap!!!
41. Air Locks Closing.
42. "Oh, My God!"
43. Lasers Charging Up.
44. "We Need More Power!"
45. Ray Guns Blasting.
46. Calling the Mothership.
47. Horns Blaring.
48. "We Won!"
49. "Lock on Target!"
50. Crystals Charging.
51. Area 51 Guard: "No Admittance."
52. Zap-Zap!
53. Warning Alarms.
54. Air Locks Opening.
55. "Set to Stun!"
56. "Red Alert!"
57. Shields Up.
58. Warp Speed.
59. "Blast 'em!"
60. Eyeballs Squishing.
61. Spaceships Cloaking.
62. Radar Ping.
63. "Fire at Will!"
64. "Take Me to Your Leader."

## Sound Blaster® AWE64 Value

The latest Sound Blaster technology is ready to invade your multimedia PC. At an out of this world price, **$99.99** (estimated street price), Sound Blaster AWE64 Value is your logical upgrade to high-fidelity audio. Hear every eerie sound with frightening clarity with up to 64 simultaneous voices of Advanced WavEffects™ & WaveGuide Synthesis. 512K onboard RAM for SoundFont® samples and high performance, lets you add your own alien sounds. Also included, the hottest Internet software. To learn more about the Sound Blaster AWE64 Value, contact us at: **www.soundblaster.com/sound/AWE.**

© Copyright 1997 Creative Technology Ltd. Sound Blaster and the Creative logo are registered trademarks and Advanced WavEffects and Creative WaveSynth/WG are trademarks of Creative Technology Ltd. in the United States and/or other countries. SoundFont is a registered trademark of E-mu Systems, Inc. in the United States and/or other countries. All other names are property of their respective owners. All specifications are subject to change without prior notice. All rights reserved.

CREATIVE®
WWW.SOUNDBLASTER.COM

**Circle 59 on reader service card**

# Adobe After Effects Brings Wizardry to Web Pages and Presentations

GRAPHICS

WHAT'S A COUCH potato's favorite food? Eye candy. Whether it's scenes of battling starships or flashy title sequences with flying text, we've come to expect special effects in everything from Web pages to presentations. Adobe **After Effects**, available in a Macintosh version since 1991, has become popular among film producers, Web publishers, and CD-ROM designers. I tested a beta copy of the new version 3.1 for Windows 95 and NT.

**EFFECTIVE VIDEOS: Adobe's After Effects spices up multimedia projects. It distorts and animates clips—and can even create lightning.**

This $995 program is not for everyone. Buying After Effects to do basic video editing is like buying a Cuisinart to stir Ovaltine. However, if you need complicated, flashy effects to spice up a video, a multimedia project, or a Web page, you can't do better than After Effects.

Adobe's program lets you combine, stretch, spin, and otherwise alter video clips and still images. You begin by importing clips or images created in other programs. Then you position them within After Effects' Composition window and use the Time Layout window to specify how their properties—size, position, and appearance—should change over time. When you finish, you can render the final product, which might be a video clip or a series of stills that you import into an animation package.

To cook up these visual feasts, After Effects demands a Pentium-class PC and at least 32MB of RAM. (It is optimized for, but does not require, a Pentium MMX system.) Although you won't master the program in a day, its interface is efficient and precise. For example, you can show or hide each effect's parameters with controls that resemble those of Windows 95's Explorer. To adjust most effects, you click the mouse or type in exact numeric values.

After Effects also supports plug-in modules; dozens of Macintosh plug-ins are migrating to Windows.

After Effects will ship in a $995 Standard Version as well as in a $1995 Production Bundle that sports high-end video and film effects; only video or film pros need the latter.

*—Jim Heid*

**After Effects 3.1**

**PRO:** Professional-quality visual effects for video and online projects.
**CON:** Expensive.
**VALUE:** Excellent choice if you need high-end effects.
**Adobe Systems**
408/536-6000
www.adobe.com
List price: Standard Version $995, Production Bundle $1995
READER SERVICE NO. 770

# Active Presenter: Make Your Pitch on the Web

PRESENTATIONS

"THE INFORMATION is on our Web site" is now a mantra for companies that have come to appreciate the Web as a great medium for increasing public presence. But what if you want a site to target specific visitors—say, potential customers—with more than a smattering of text-based fact sheets? With Software Publishing's **Active Presenter,** you can create compelling presentations and then publish them on the Web using a bundled companion application called **WebShow Publisher**.

You don't need to be a design guru or a programmer to use Active Presenter. It's aimed at people with no background in graphics or HTML. The program comes with 22 layouts, 14 designs, and 18 color schemes. You can add logos, clip art, and sound and movie clips to your presentation. A built-in component, ActiveChart, allows you to add charts and tables. (There's also an importer tool for work you've already done in Microsoft PowerPoint.)

With the bundled WebShow Publisher, you can easily publish Active Presenter presentations to the Web. A slimmed-down copy of Active Presenter can be distributed at no cost to anyone who will be viewing your presentation.

Consider the ways you might use Active Presenter. First, you can simply post the presentation for viewing at any convenient time. Second, you can get personal: Your marketing department could, say, arrange a conference call, get the interested parties on the phone and logged in to the company's Web site, and lead participants through the presentation. You can also make pitches to individual clients and conduct many types of business meetings.

*—Joe Gomolski* ▶

**Active Presenter (With WebShow Publisher)**

**PRO:** Easily create and publish presentations on the Web.
**CON:** Could use more design tools.
**VALUE:** Worth the money.
**Software Publishing Corp.**
800/794-6876, 408/537-3000
www.spco.com
Street price: $50
READER SERVICE NO. 771

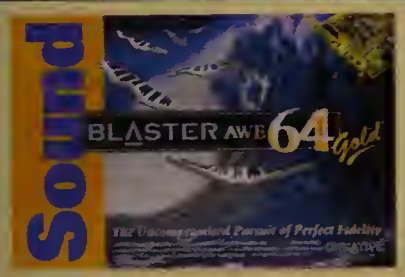
# AWE 64

## SOUNDS OF

# A Traffic Jam

## Beat the Rush!

1. Engines Pinging.
2. Horns Honking.
3. "Are We There Yet?"
4. "Where'd You Get Your License?!"
5. "I Need to Get to the Store Before They're Out of Sound Blaster AWE64's!"
6. Bumpers Crunching.
7. Sirens Wailing.
8. "Get Out of My Way!"
9. Cop: "License Please."
10. Muffler Dragging Behind Car.
11. Cars Crashing.
12. Engines Overheating.
13. Sunroof Opening.
14. Gasket Blowing.
15. Car Burning at Side of Road.
16. Tire Hissing.
17. Vroom Vroom.
18. Horn of a Semi Truck.
19. Car Phone Ringing.
20. "It's Your Fault!"
21. Brakes Screeching.
22. "What Do You Mean You Don't Have Insurance?!"
23. Music Blasting.
24. Horns Blaring.
26. Engines Revving.
27. Traffic Helicopter Overhead.
28. Tire Iron Hitting Pavement
29. Clunk of Transmission.
30. Blaring Radios.
31. Turn Signals Blinking.
32. Car Stalling.
33. Slurping Soda.
34. Changing Radio Stations.
35. Car Doors Opening.
36. Rolling Down Windows.
37. Shifting Gears.
38. Drumming on Steering Wheel.
39. Munching Potato Chips.
40. "I Wish I Had Some Coffee."
41. "Not AGAIN!"
42. Air Bags Popping.
43. Backfire.
44. "Why Didn't I Work at Home Today?"
45. Singing With the Radio.
46. @#$(!)%#!
47. Changing CDs.
48. "Hi Honey, I'm Going to Be Late."
49. Ambulance Siren.
50. Car Running Out of Gas.
51. Engine Choking.
52. People Arguing.
53. Glove Box Slamming Shut.
54. Door Locking & Unlocking.
55. Seats Moving.
56. "Are We There Yet?"
57. Cars Speeding By in Other Direction.
58. Rustling of Newspaper.
59. "I Told You We Should Have Taken the Other Freeway!"
60. Air Conditioner Blowing.
61. Pagers Beeping.
62. "There's a seven Car Pile Up..."
63. "Are We There Yet?"
64. "It's Finally Moving!"




**Sound Blaster® AWE64 Gold**
**$199.99**
Estimated Street Price

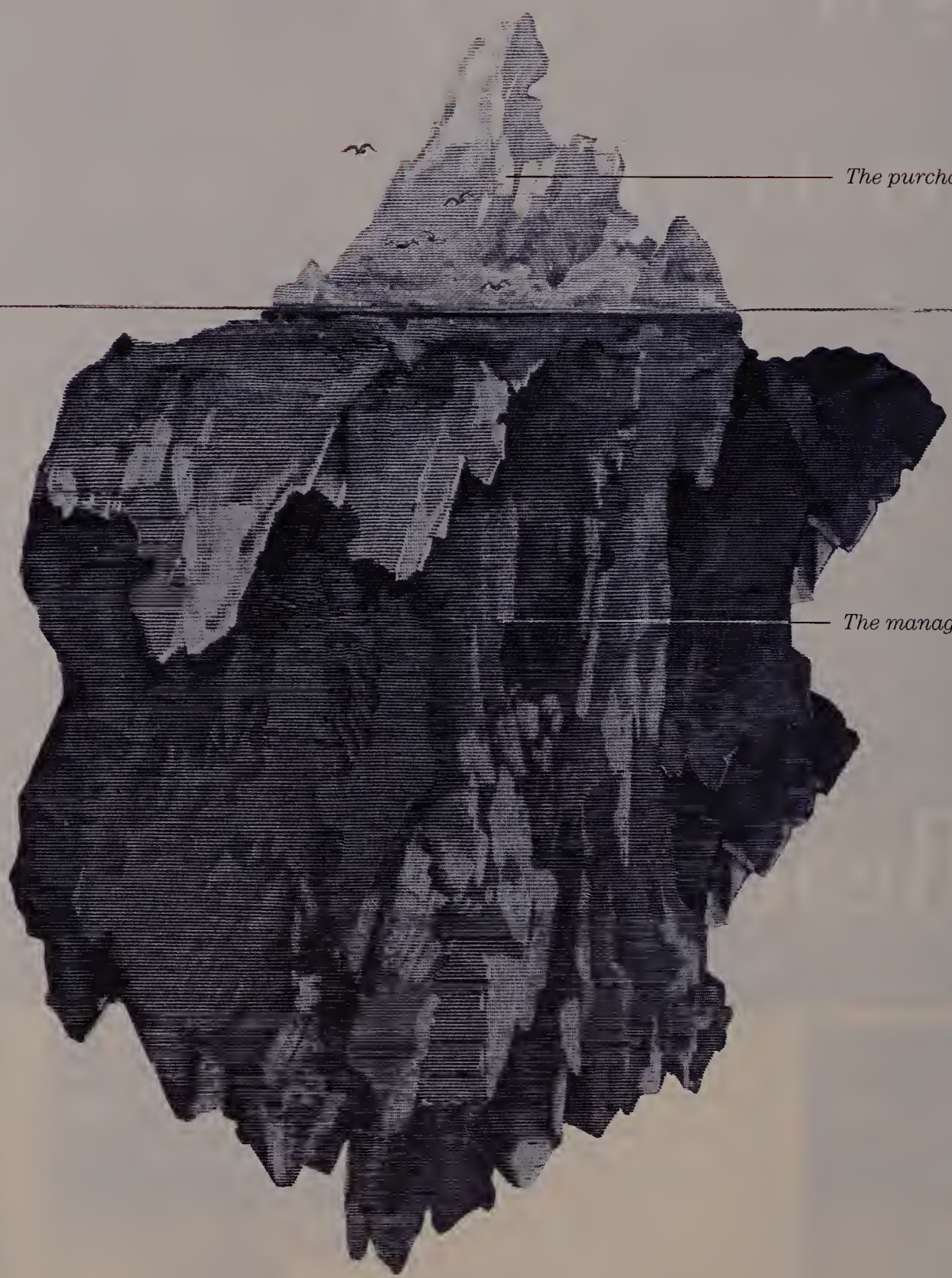
**Sound Blaster AWE64 Value**
**$99.99**
Estimated Street Price

Upgrade to the hottest sound cards that will drive your PC audio into a new realm! Introducing the best sounding Sound Blasters ever, bringing high-fidelity to your multimedia PC at an incredible value. To learn more about the Sound Blaster AWE64's, contact us: **www.soundblaster.com/sound/AWE.**

**Circle 69 on reader service card**

CREATIVE®
WWW.SOUNDBLASTER.COM

© Copyright 1997 Creative Technology Ltd. Sound Blaster and the Creative logo are registered trademarks of Creative Technology Ltd. in the United States and/or other countries. All other names are property of their respective owners. All specifications are subject to change without prior notice. All rights reserved.




intel inside
pentium®
PROCESSOR

**When choosing a PC for your company, remember the lesson of the Titanic.** High PC management costs aren't just bad in themselves; they also translate into lost productivity. Worse, they suggest a PC environment barely under control. But at HP, we don't just make Intel® Pentium® processor-based PCs that you can manage. We make PCs that help you manage. Between our hardware and software features such as TopTOOLS and OpenView, we offer a host of non-proprietary, DMI-standards-based management solutions. You can remotely upgrade the BIOS of multiple PCs, monitor every PC in your network,* troubleshoot problems and, in general, minimize costs. The iceberg will still be out there, of course. But it won't be one you'll founder on. *www.hp.com/go/vectracommercial*

**HP Vectra VE for Business** FROM **$992**†

**Better products, better productivity.**

HEWLETT® PACKARD

*Using TCP/IP protocol over the network. †Starting U.S. street price for HP Vectra VE Series 3. Monitor not included. Price includes HP DeskDirect J3239A LAN adapter card. Intel Inside and Pentium are registered trademarks of Intel Corp. ©1997 Hewlett-Packard Company PPG441

**IT'S LIKE DIGITAL WHITE-OUT.**

**The Ricoh CD-RW writes over your mistakes.**

White-out was the typist's friend. A flick of the brush and mistakes disappeared.

Now you can do the same thing with CDs you record. Because the Ricoh 2X/6X CD-ReWritable (CD-RW) both writes and rewrites CD-RW discs. It also writes to CD-Recordable (CD-R) discs, which means you'll have compatibility with past and future formats on multi-read drives. You have all the advantages of a CD—along with all the flexibility of a floppy.

Ricoh is a leader in CD recorders. Our SCSI drive with 2MB buffer (select models) ensures uninterrupted recording. And the Ricoh MP6200 Series not only records CD-ReWritable discs (readable by Multi-Read CD-ROM drives and DVD-ROM drives), it also records CD-Recordable (CD-R) discs, too.

Go with the CD drive that lets you make a mistake—and white it out. Go Ricoh. Call **1-800-953-REDO** (7336). Or contact us at **www.ricoh.com** on the Web.

RICOH®

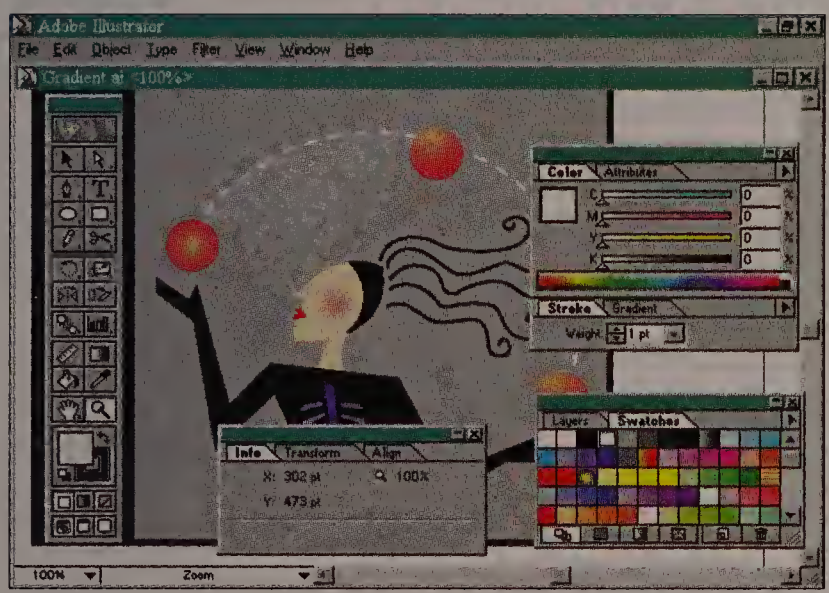
All trademarks and service marks are the property of their respective companies.

**Circle 198 on reader service card**

# Adobe Illustrator 7: A Good-Looking Face-Lift

GRAPHICS

IT'S BEEN FIVE years since the last major Windows update of Adobe Illustrator, the veteran high-end illustration program. In the new version 7, you'll find cosmetic improvements that add up to a good face-lift.




**ADOBE'S NEW LOOK: Illustrator 7 sports mostly cosmetic improvements, but the program's many tools are also easier to use.**

Illustrator is playing catch-up: Favored by graphics professionals and amateur artists for years, its features were falling a bit behind those offered in Macromedia's FreeHand and Corel's CorelDraw. **Adobe Illustrator 7** looks better than the competition now, but by the narrowest of margins.

Illustrator 7 offers a much-improved interface. If you're a technical illustrator, desktop publisher, or Web developer who uses Adobe Photoshop and PageMaker, you'll find Illustrator 7's new unified look terrific: It mimics the menu structure, palettes, and keyboard shortcuts of those sibling products. Illustrator also now sports tool tips, single-key shortcuts for every tool, and context-sensitive menus that change depending on the part of the image selected.

Adobe has definitely made Illustrator more Web-friendly. The program now lets you attach Web addresses to images and supports RGB color. It can also export JPEG and GIF89a pictures—but oddly, it can't export HTML files, as CorelDraw can.

Graphic artists interested in getting the most professional package at the best price will be drawn to Illustrator 7.

—*Shane Mooney*

**Adobe Illustrator 7**

**PRO:** Best professional illustration program.

**CON:** Not enough unique features to merit switching from CorelDraw.

**VALUE:** Definitely worth upgrading from an older version.

**Adobe Systems**
800/833-6687, 408/536-6000
www.adobe.com
Street price: $595, upgrade $99

READER SERVICE NO. 772



The bigger picture in monitors comes this Summer.

19"
18" DISPLAY

PRINCETON®
GRAPHIC SYSTEMS
color your world bigger.
800-747-6249 ext.182
www.prgr.com
2801 S. Yale St., Santa Ana, CA 92704
Telephone 800-747-6249 or 714-751-8405
Fax 714-751-5736, Fax-On-Demand 714-751-0168
© 1997 Princeton Graphic Systems. All rights reserved.
Circle 178 on reader service card

# "Can't I Print Just One Label?"

**The Smart Label Printer® The Smartest Way To Label Just About Anything.**

Let's face it. Printing one label off an entire sheet just isn't smart. So use The Smart Label Printer instead. It's the easy, convenient way to quickly print labels for envelopes, packages, file folders, diskettes, ID badges, Rolodex® cards and VHS tapes–or anything else that needs a label.

Best of all, Smart Label software can capture an address or text right from your computer screen. There's no need to retype it. Which means you can print it instantly or save it to the built-in database. You can even customize it with fonts, graphics and bar codes. What's more, you can print a label without exiting an application, whether it's in an MS-DOS, Windows or Macintosh system.

The Smart Label Printer® EZ30. And The Smart Label Printer® Pro. Printing labels any other way is a waste.

Call for yours today. 1-800-688-0817
or e-mail to info@seikosmart.com.
On the Web at www.seikosmart.com.

SII Seiko Instruments

Smart Label Printer is a registered trademark of Seiko Instruments. © 1997 Seiko Instruments USA Inc. All rights reserved.

*Available at:*

COMPUSA THE COMPUTER SUPERSTORE 1-800-COMPUSA

COMPUTER City 1-800-THE-CITY

Fry's ELECTRONICS

OfficeMax 1-800-788-8080

ELEK-TEK Computer Wonderland 1-800-395-1000

*Call:* MicroWarehouse at 1-800-367-7080, MacWarehouse at 1-800-255-6227, PC & Mac Connection at 1-800-800-1111, Global Computer Supplies at 1-800-8GLOBAL, CDW at 800-800-4239, Inmac at 1-800-972-3212, Dartek at 800-832-7835 or MISCO/Power Up at 1-800-876-4726.

Circle 188 on reader service card




# Exabyte Eagle Nest: Most Flexible Storage

STORAGE

WOULDN'T YOU LIKE to have one drive that works with many types of removable storage? Then if you need to archive a folder full of files, you'd pop in a 100MB Zip disk—or maybe the higher-capacity but somewhat slower 120MB LS-120 "superfloppy" disk. To back up a whole hard drive, you'd insert a 4GB uncompressed (8GB compressed) Travan TR4 tape cartridge.

Of course, no single backup drive offers such flexibility. But Exabyte's **Eagle Nest**, a modular storage system, is the next best thing. I tested a shipping version.

You install the Eagle Nest "drive docks" in a PC's 5.25-inch external storage bay. You also need to install the 16-bit Enhanced IDE expansion card bundled with each Eagle Nest. Note that the product requires IRQ 10, 11, 12, or 15 to be free on the PC. (You can check IRQs on a Windows 95 PC by selecting the *System* icon in Control Panel, clicking *Device Manager•Computer•Properties*, and then clicking *Interrupt Request*.)

If you have the right IRQ free, the rest of the installation process is easy, thanks to Exabyte's step-by-step instructions. You'll need to load some software; then you can swap in a Zip, LS-120, or fast EIDE Travan TR4 module that you can share with workgroup members or move between your home and office PCs.

Swapping the modules is a snap: You slide each into an empty Eagle Nest unit and seat it by firmly pressing in on its front-mounted handle. To avoid system problems or corrupted data, power is delivered only after you lock the drive in place using the metal key that projects from the front. To remove the module, reverse the steps. There's no need to power down your PC while swapping drives. This is particularly convenient for sharing the drives among coworkers in an office.

Separate Eagle Nest units cost $90 with a 16-bit EIDE adapter. The Travan TR4 drive module costs $365 including the Nest, backup software, an EIDE adapter, and one cartridge. The Zip and LS-120 drive modules cost $230 each with the Nest (but without the disk). By the time you read this, Exabyte will have added a 1.4GB hard drive module and Eagle Nest system to its lineup for $399.

Overall, Exabyte's Eagle Nest products are an easy, affordable way to add storage.

—*Rex Farrance* ■

### Eagle Nest Storage Products

**PRO:** Easy system for using EIDE TR4 cartridges, Zip disks, and LS-120 storage media.

**CON:** PC must have a free externally accessible drive bay.

**VALUE:** Affordable, sensible, and flexible storage.

**Exabyte**
888/637-8488
www.exabyte.com
Street price: $90 to $399

READER SERVICE NO. 773

# Robert Schienberg plans hostile takeovers for a living. But at least his monitor is user friendly.

When Robert Schienberg plans a corporate takeover, he has a lot to think about. Profit and loss statements, price/earnings ratios, product potential, and much more.

But the one thing he doesn't have to think about is the monitor he uses to do it all on. The Hansol 700P (15.7" viewable). Its .26mm dot pitch really helps him see clearly. While its quick set-up, drop down control panel with 20 on-screen settings, modern design, reliability, and simplicity of operation, can't help but make his life a little bit easier.

Designed for Microsoft Windows 95

So whether you're planning a takeover or a makeover, downsizing or upgrading, get the monitor that treats you like a friend.

After all, you never know when you may need one. Especially if you're Robert Schienberg.

Ideas that Shine

Hansol

www.hansol-us.com
1-888-HANSOL1(1-888-426-7651)
Hansol Multitech, Inc.
6 Centerpointe Dr., Suite 220
La Palma, CA 90623

©1997 Hansol Multitech, Inc. All trademarks and registered trademarks belong to their respective owners.

Circle 125 on reader service card

# After you've done your spreadsheet, take it for a spin.

## 166 MHz TD-22

- Intel® 166 MHz Pentium® Processor
- 16 MB Synchronous DRAM
- 512K Pipelined Burst Cache
- Intergraph Intense 3D™ 100 Graphics w/ 4 MB EDO RAM
- 1.7 GB 10ms EIDE Hard Drive
- 12X EIDE CD-ROM
- Microsoft® IntelliMouse®
- 2 USB Ports, 2 Serial Ports, 1 Parallel Port
- 15sd67 Monitor (14.0"viewable)

**$1,649** model #475

Upgrade to 32 MB SDRAM – *Add $100*
Ensoniq™ 3D Wavetable Card plus Amp, Speakers & Mic – *Add $75*

## 166 MHz TD-25

- Intel 166 MHz Pentium® Processor with MMX™ Technology
- 32 MB Synchronous DRAM
- 512K Pipelined Burst Cache
- Intergraph Intense 3D™ 100 Graphics w/ 4 MB EDO RAM
- 3.5 GB 10ms EIDE Hard Drive
- 12X EIDE CD-ROM
- Ensoniq™ 3D Wavetable Card plus Amp, Speakers & Mic
- Microsoft® IntelliMouse®
- 2 USB Ports, 2 Serial Ports, 1 Parallel Port
- 15sd67 Monitor (14.0"viewable)

**$2,099** model #474

Intel Pro 100B 10/100Base-T Networking Card – *Add $125*
17sd69 Monitor(16.0" viewable) – *Add $255*

## 200 MHz TD-25

- Intel® 200 MHz Pentium® Processor with MMX™ Techn
- 32 MB Synchronous DRAM
- 512K Pipelined Burst Cache
- Intergraph Intense 3D™ 100 Graphics w/ 4 MB EDO R
- 5.2 GB 10ms EIDE Hard Drive
- 12X EIDE CD-ROM
- Ensoniq™ 3D Wavetable Card plus Amp, Speakers & M
- Microsoft® IntelliMouse®
- 2 USB Ports, 2 Serial Ports, 1 Parallel Port
- 17sd69 Monitor (16.0"viewable)

**$2,649** model #473

33.6 Baud Fax/Modem – *Add $155*

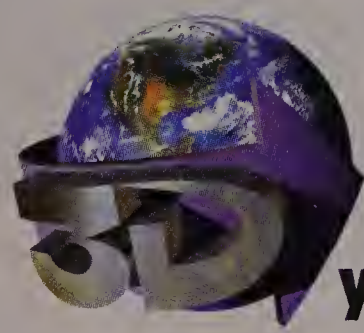
**Systems include:** 30-day money-back guarantee, 3 year limited warranty,* one year on site, Windows 95® w/30 Days Free Phone Support, Macromedia® Extreme 3D™ **, tool-free mini tower co

# Business will never be the same.

Intergraph, the leader in 3D workstation graphics, now brings the world of 3D computing to the business world.

**3D computing at a PC price.** Even if you're not working with 3D applications yet, they're coming. And an Intergraph TD PC with 3D capabilities doesn't cost any more than a standard PC. It just makes more sense. You'll be able to excell at your standard business applications today and have a path to the 3D experience of the future.

Go ahead and compare our 3D PC prices with other PCs without 3D. It's like Intergraph gives you 3D for free. You'll get 3D, MPEG and AVI compatibility that you won't find on other PCs at these prices. And no one beats Intergraph for features, performance, quality and reliability at any price.



**It's where you're going. We'll take you there.**

**Great graphics.** Now you can build a complex spreadsheet, create a stunning multimedia presentation with TV-quality video, check out the competition on the Web and play the latest 3D game in your spare time — all on the same computer. The Intergraph TD.

**Count on Intergraph** Our unmatched worldwide support programs deliver the service today's PC user demands to stay productive.

For more than 25 years, we've been the interactive graphics leader. We're experts at building computers for disciplines that demand performance, quality and reliability. Our workstations are used for animation, military simulations, game development, engineering, architecture and more.

**Now let us build a computer for you.**

INTERGRAPH
COMPUTER SYSTEMS

Circle 116 on reader service card

**66 MHz TD-225 NEW!**

ntel 266 MHz Pentium® II Processar with MMX™ Technalagy
4 MB EDO DRAM
12K Pipelined Burst Cache
ntergraph Intense 3D™ 100 Graphics w/ 4 MB EDO RAM
.2 GB 10ms EIDE Hard Drive
2X EIDE CD-ROM
nsoniq™ 3D Wavetable Card plus Multimedia Keybaard
Micrasaft® IntelliMause®
USB Parts, 2 Serial Parts, 1 Parallel Part
7sd69 Manitar (16.0"viewable)

**$3,349**

d95 Manitar (20.0 viewable) — *Add $922*
ee years On-Site Limited Warranty Service* — *Add $159*

# Order Direct Now!
# 1-800-394-0163

## or order on-line
## www.intergraph.com/express
## Next-day shipment available.

*Service provided by Intergraph Corporation. On-site service may not be available in certain remote locations. 30-day money-back policy does not include original or return shipping and handling charges and begins from date of shipment. For a complete copy of our terms and conditions of sale or Limited Warranties, please write Intergraph, One Madison Industrial Park, Mail Stop CR080, Huntsville, AL 35894-0001. **Macromedia Extreme 3D available while supplies last. Prices and specifications are valid for the U.S. only and are subject to change without notice. Prices do not include shipping and handling. All purchases are subject to availability. Intergraph and the Intergraph logo are registered trademarks and TD is a trademark of Intergraph Corporation. The Intel Inside Logo, Pentium Pro, Pentium, and MMX are registered trademarks of Intel Corporation. Windows is a registered trademark of Microsoft Corporation. MC970331 Intergraph Computer Systems 1-205-730-5441

# "They thought that my new
# just a big surge suppressor

**1 User-replaceable Batteries**
*Cells can be easily swapped out, saving time and expense: no need to return to the factory for service. Batteries last 3-6 years under normal usage.*

**2 Integrates the Security of a Surge Suppressor with the Power of a UPS**
*Back-UPS Office provides enough outlets to protect your customers' entire system. Six outlets guard your hardware with full time surge protection. Three of the six provide instantaneous battery backup to keep your system from crashing in the event of a brownout or blackout.*

**3 Battery Replacement Warning Prevents Downtime**
*An LED signals when the Back-UPS Office's internal self-test finds the battery near the end of its life. Users have 6-8 weeks warning.*

**4 Site-Wiring Fault Indicator**
*Without a proper ground, most surge protection is useless. Back-UPS Office alerts you to wiring problems such as missing ground and reversed polarity, two common wiring mistakes which otherwise would require an electrician's visit to diagnose.*

**5 Convenient BlockSafe™ Outlet Spacing**
*Back-UPS Office's outlets are spaced to accommodate all size plugs, including large transformer blocks. No need to sacrifice the use of any outlets to accommodate large block plugs.*

**6 Circuit breaker**
*Provides protection in the event of an overload or short circuit; no fuse, no hassle.*

LIFETIME EQUIPMENT PROTECTION
$25,000

*Under the Lifetime Equipment Protection policy, APC will repair or replace connected equipment damaged by surges, including lightning strikes, up to $25,000. See policy for details.*

*APC has won more awards for reliability than all other UPS vendors combined.*

Mail-In
Offer

# $30 REBATE

**With the Purchase of a Back-UPS® Office™**
**between April 1 and August 30.**

Just send this completed certificate along with an original UPC symbol from an APC Back-UPS® Office™ box and the original store receipt with the Back-UPS Office circled, and get a $30 rebate! See details.

APC®

**888-289-APCC Ext: 8121**
**Fax: 401-788-2797**
**E-mail: bkoffice@apcc.com**
**http://www.apcc.com**

**Just send this completed certificate along with a UPC symbol from an APC Back-UPS® Office™ box and the original dated store receipt with the Back-UPS Office circled for your $30 mail in rebate!**

**Mail Coupon to:** Back-UPS® Office™ Rebate
P.O. Box 52930
Dept. #10311
Phoenix, AZ 85072-2930

Name: _____

Company/Title: _____

Address: _____

_____

City: _____ State: _____ Zip: _____ Ctry: _____

Phone: _____ E-mail: _____

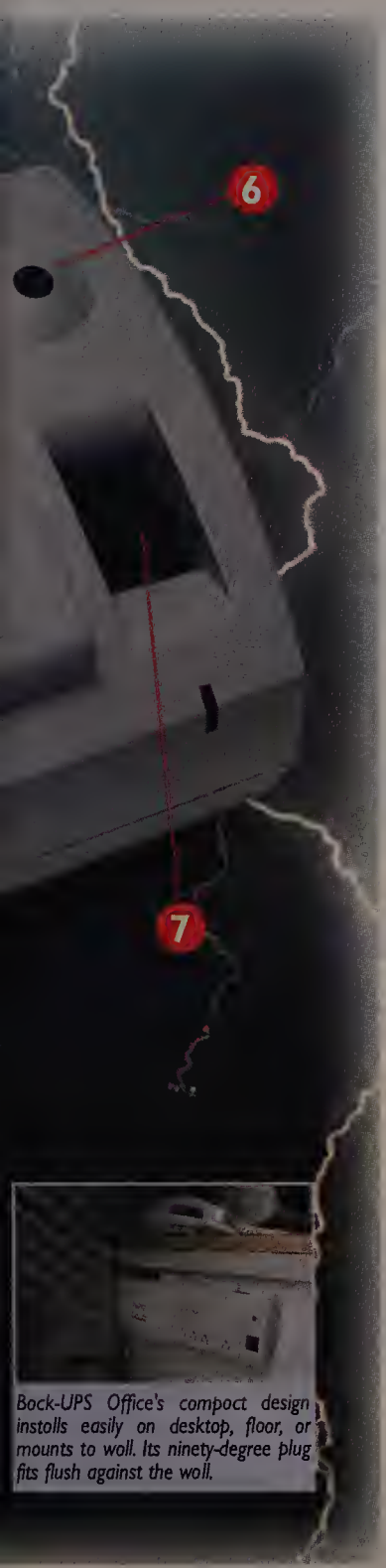
**Additional Terms and Conditions:**

1. Offer good in US & Canada only. Rebate in US Dollars only.
2. Store receipts must be dated between April 1, 1997, and August 30, 1997.
3. Requests must be received by September 15, 1997.
4. Customers must send in: - Original UPC labels printed on APC Back-UPS Office packaging, - Original store receipt, - Completed coupon.
5. Only original receipts accepted. Customer can request that their receipt be returned by including a note and a self-addressed stamped envelope with their rebate request.
6. Void where prohibited or restricted by law.
7. Limit five (5) rebates per customer.
8. Proof of mailing does not constitute proof of delivery. APC is not responsible for lost, late, illegible or incomplete orders or postage-due, damaged or separated mail.
9. Not eligible: APC employees, agencies, distributors or resellers.
10. Fraudulent submission of multiple requests could result in federal prosecution under the U.S. Mail Fraud Statues (18 USC, Section 1341 and 1342).
11. Not valid with any other offer.
12. Allow 6-8 weeks for delivery.
13. Offer expires August 30, 1997.
14. Offer only good on Back-UPS Office (UPC code 7 31304 00588 9).
15. APC Reserves the right to rescind promotion at any time.

©1997 APC. All rights reserved. All trademarks are property of their owners. DSN-0189

Mail Code:P3-RE

# ultipath Back-UPS® Office™ was
# then the lights went out."




Back-UPS Office's compact design installs easily on desktop, floor, or mounts to wall. Its ninety-degree plug fits flush against the wall.

### Recessed Master On/Off Switch

*Prevents accidental shut-offs and conveniently controls power to the entire connected system.*

### net Ready Fax/Modem Protection

*Back-UPS Office's built-in phone line/10 Base-T network cable surge protection prevents data urges from damaging internal and external ms, motherboards, input/output cards, and system components.*

**able at:**

CTO AREHOUSE™ COMPUSA THE COMPUTER SUPERSTORE

Protect ME! APC

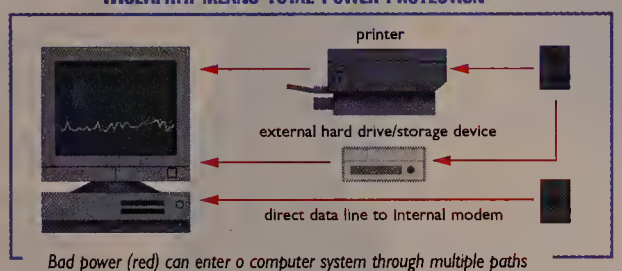
Power problems attack computers relentlessly. Did you know that you have a better chance of winning the lottery than of escaping power problems? They are the single largest cause of computer data loss and hardware damage.

Back-UPS Office provides clean, reliable power for your entire system. Instantaneous battery backup ensures uninterrupted operation of your CPU, monitor and an external storage device. Full-time surge suppression and site-wiring fault protection spreads a true multipath safety net under any remaining peripherals, like modems, printers, faxes and phone systems. Back-UPS Office also provides convenient BlockSafe™ outlet spacing to handle all size plugs – even large transformer blocks.

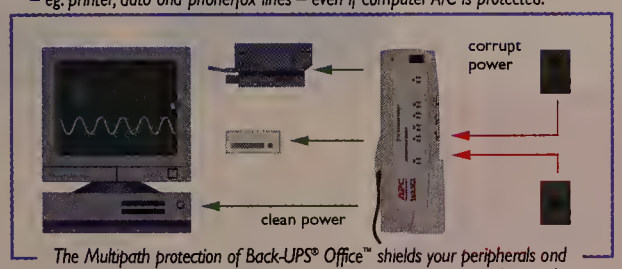
### Unique multipath protection keeps your PC and data safe

Plugging phone lines or other peripherals into your computer increases your vulnerability to power problems. When a surge hits an unprotected peripheral, it can blaze down serial cables and datalines, and toast your expensive PC. Multiple peripherals and datalines to and from your system are vital, but dangerous. Without them you can't do your job. If a power sag locks your keyboard or reboots your computer before you've saved work, or while you are downloading from the Internet, you can lose data, time

**MULTIPATH MEANS TOTAL POWER PROTECTION**




*Bad power (red) can enter a computer system through multiple paths – eg. printer, data and phone/fax lines – even if computer A/C is protected.*




*The Multipath protection of Back-UPS® Office™ shields your peripherals and guards your computer from bad power on every path, providing clean, safe power (green), to your entire system.*

and money. Don't spend another late night at the office to meet your deadline. Join over 8,000,000 computer users worldwide who prefer APC to protect hardware and data.

### Back-UPS Office protects your entire system

Until now, protection for your entire system required several devices. Back-UPS Office means clean, safe power to every peripheral, and instant battery backup to keep your system from crashing. It means protection for less by integrating the security of a surge suppressor with the power of a UPS, guaranteed up to $25,000.

**Only Back-UPS Office provides single device Multipath protection for all your equipment**

| The Multipath Power Protection Advantage | Traditional Surge Protector | Traditional UPS | Back-UPS Office |
|---|---|---|---|
| **Protected Paths** | | | |
| AC | • | • | • |
| Data | | | • |
| Phone | | | • |
| **Total Outlets** | 7 | 2 | 6 |
| **Number of Block Outlets** | | | 2 |
| **Protection from** | | | |
| Surges | • | • | • |
| Spikes | • | • | • |
| Blackouts | | • | • |
| Brownouts | | • | • |
| Overvoltages | | | • |
| **Typical Runtime in Minutes** | | | |
| with Pentium 100 w/15" monitor | | 10 | 10 |
| **Battery backup for** | | | |
| PC | | • | • |
| Monitor | | • | • |
| Storage Devices/Zip Drives | | | • |
| **Full-time surge protection for** | | | |
| Fax/Modem | • | | • |
| Laser Printer | • | | • |
| Speakers | • | | • |
| **Dataline protection for** | | | |
| Internet or Network | | | • |

## $30 REBATE

**With the Purchase of a Back-UPS Office between April 1 and August 30, 1997.**

Simply complete the attached redemption card and send along with an original UPC symbol from an APC Back-UPS Office box and the original store receipt with Back-UPS Office circled, and get a $30 Rebate.

See redemption card for more information. If redemption card is missing please call our **PowerFax** line at **800-347-FAXX** and request literature **#1301**. Or download the redemption card from our Web Site at: **http://www.apcc.com/english/promo/promo025.htm**. You can also fax the coupon below to APC at **(401) 788-2797**.

## FREE SOLUTIONS GUIDE!

Just complete the information below and send to APC to receive redemption information regarding the $30 Rebate Offer. We'll send you a Free 60 Page Solutions Catalog just for filling out the coupon!

☐ **YES!** Send me a $30 Rebate Redemption Card.

☐ **NO** I'm not interested at this time but please send me a free 60 Page Solutions guide.

Name: _____
Title: _____
Company: _____
Address: _____
_____
City/Town: _____
State: _____ Zip: _____ Country _____
Phone: _____
Brand of UPS used? _____ # _____
Brand of PCs used? _____ # _____
Brand of Server used? _____ # _____

**dept. P3-RE**

(800)347-FAXX PowerFax • CompuServe: GO APCSUPPORT
132 Fairgrounds Road, West Kingston, RI 02892 USA

©1997 APC. All Trademarks are the property of their owners. BF08ES

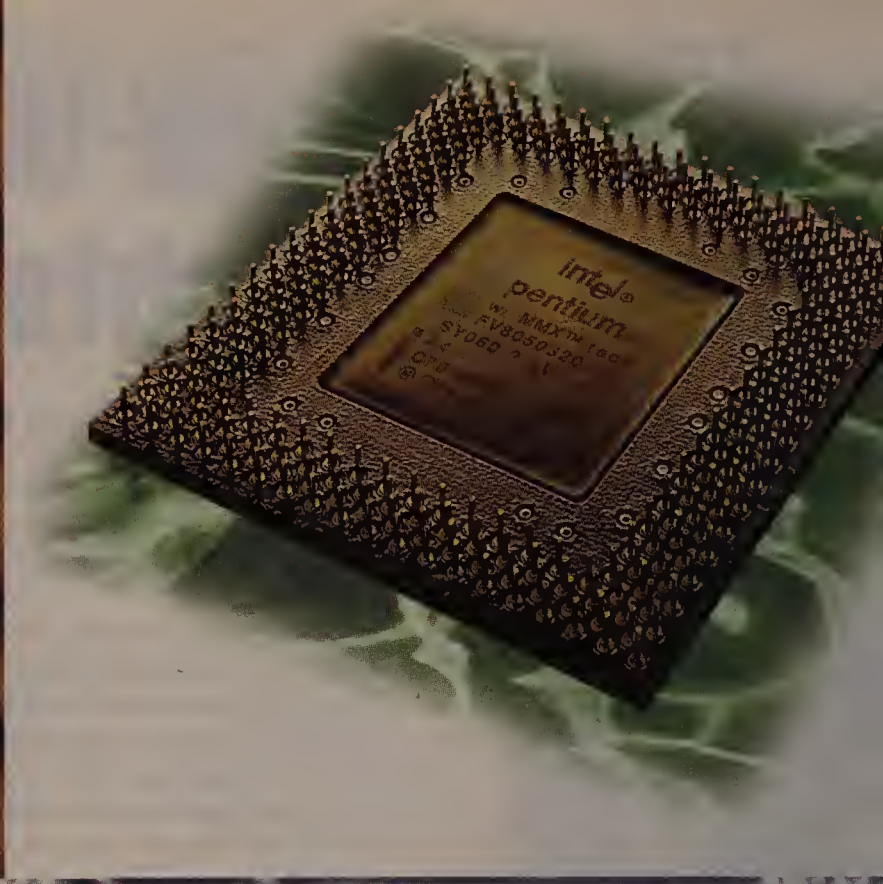
APC®

**(888) 289-APCC x8121**

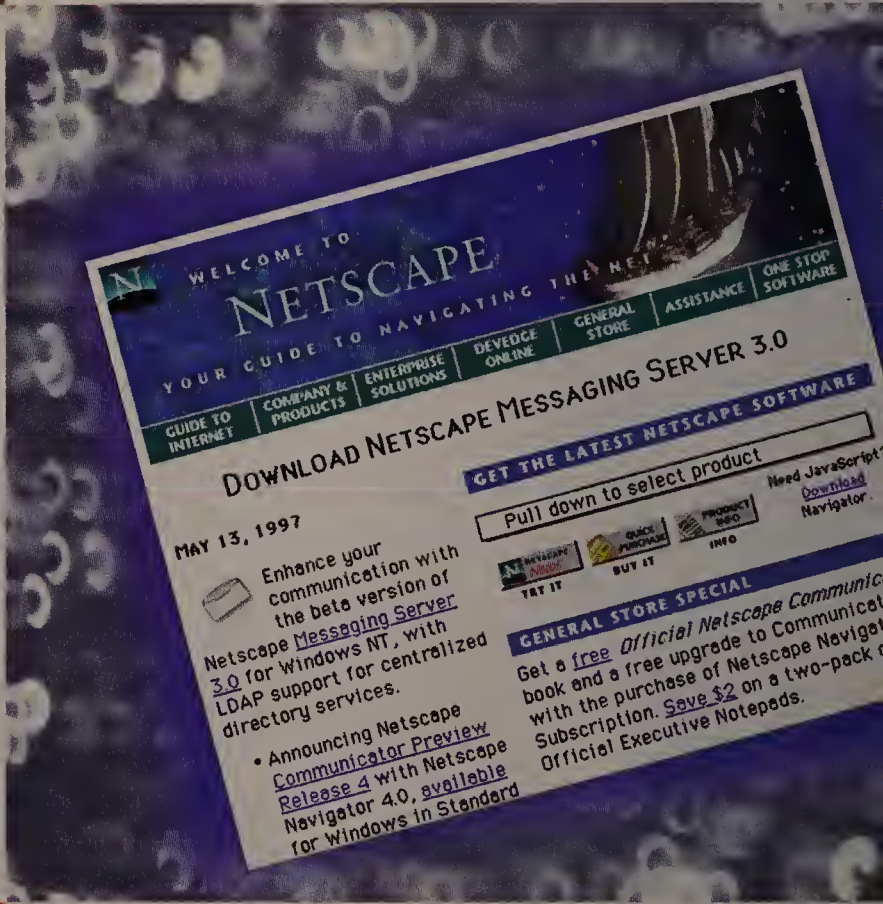
**Fax: (401) 788-2797 • http://www.apcc.com**

*Visit our Booth #3032 at PC Expo in New York!*

Circle 17 on reader service card


intel
pentium
MMX

Microsoft Office 97
Microsoft
NEW!
Requires Windows 95 or Windows NT Workstation
The Most Popular Suite—Now with the Power of the Web
Word 97
PowerPoint 97
Excel 97
Access 97
Outlook 97
Microsoft Office 97
Professional Edition


WELCOME TO
NETSCAPE
YOUR GUIDE TO NAVIGATING THE NET
GUIDE TO INTERNET
COMPANY & PRODUCTS
ENTERPRISE SOLUTIONS
DEVEDGE ONLINE
GENERAL STORE
ASSISTANCE
ONE STOP SOFTWARE
DOWNLOAD NETSCAPE MESSAGING SERVER 3.0
GET THE LATEST NETSCAPE SOFTWARE
Pull down to select product
MAY 13, 1997
Enhance your communication with the beta version of Netscape Messaging Server 3.0 for Windows NT, with LDAP support for centralized directory services.
• Announcing Netscape Communicator Preview Release 4 with Netscape Navigator 4.0, available for Windows in Standard
TRY IT
BUY IT
INFO
Need JavaScript? Download Navigator.
GENERAL STORE SPECIAL
Get a free Official Netscape Communic book and a free upgrade to Communicat with the purchase of Netscape Navigat Subscription. Save $2 on a two-pack o Official Executive Notepads.

PalmPilot
Robotics

# The Best Products of 1997

**In a year that saw a quantum leap in PC processing power and an explosion of Web-related products, PC World's 15th World Class Awards spotlight the top products, companies, and Web sites in 84 categories.**

BY JAMES A. MARTIN

WHAT A DIFFERENCE A YEAR MAKES. When we handed out our World Class Awards for 1996, we were still recovering from our post–Windows 95 hangovers. Pundits were predicting the rise of the $500 "network computer," while companies far and wide poured millions into their Web sites with little or no idea how to make any of the money back, let alone post a profit.

Now it's a whole new ball game. In 1996 Microsoft woke up, smelled the Java, and got serious about the Web—much to Netscape's chagrin. A spate of cheap new processors has made sub-$1000 Pentiums a reality—and made the still-vaporous network computer genre virtually moot. And now on those rare occasions when our machines are idle, instead of flying toasters, we get screenfuls of up-to-the-minute headlines, thanks to PointCast and its many "push" cousins. ▶

## INSIDE

Product of the Year 124
@Work: Hardware 124
@Work: Software 126
Newcomers of the Year 126
Work Together 128
On the Road 130
Loser of the Year 130
@Home 134
Online 136
Service & Support 136

With all this change, it's nice to know that at least two things remain constant: Virtually everybody's still losing money on the Web. And the World Class Awards, now in their 15th year, continue to honor the PC industry's best and brightest.

This year's highlights:

• Intel's MMX processor, the Pentium chip that speeds multimedia and graphics, was voted both Most Promising Hardware Newcomer and 1997 Product of the Year.

• Microsoft's Office 97 took the honors for Most Promising Software Newcomer. That's just one of a record 17 World Class Awards Microsoft was busy winning this year.

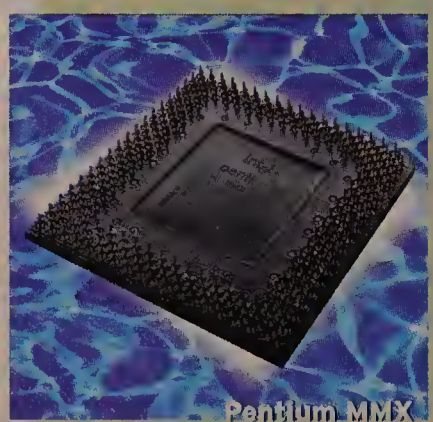
• Speaking of busy, America Online earned our judges' ire—and the Loser of the Year Award—by delivering nothing but busy signals to its 8 million members last winter. To be fair, AOL also got the nod for Best Online Service, proving that at least some things are worth waiting for.

This year our select panel of readers and industry mavens voted for award-winning products in 84 categories—the most in World Class Awards history and exactly twice the number of trophies we handed out ten years ago. Included in that number are eight brand-new Internet categories—from the top news/information service (PointCast) to the best Web search site (a dead heat between Yahoo and Alta Vista).

Of course, nobody is able to touch Microsoft in one category: operating system. Once again, Windows 95 was voted best of breed. But Win 95 may be facing some stiff competition in the coming year, mostly from its own siblings. A new version of NT and an upgrade to Windows 95 (codenamed Memphis) are both due out by year's end.

The following pages provide you with a one-stop shopping guide to the best hardware and software money can buy, our favorite Internet sites, and the top companies for mail-order sales and customer service. Don't leave home (or surf the Net) without it.

## Product of the Year


Pentium MMX

Intel's Pentium processor is no stranger to our World Class citations. Last year, for instance, the Pentium Pro and the Pentium-166 tied with Iomega's Zip drive as Most Promising Hardware Newcomers. This year's Product of the Year, **Intel's MMX line of Pentium chips,** offers an exciting twist: significantly enhanced multimedia, graphics, and communications performance.

Even though there isn't yet an abundance of MMX-aware software, MMX's ability to make such applications soar pushed the chip over the top in our judges' estimations.

In recent *PC World* tests, for instance, an MMX version of Adobe Photoshop got a 50 percent speed boost. Best of all, some MMX PCs cost barely $100 more than standard Pentium systems. The plain old Pentium is dead; long live MMX.

NEC MultiSync M700

# @Work: Hardware

**Business Desktop Computer**
**Gateway 2000 P5 line**

For the third time in four years, South Dakota–based Gateway 2000's solid PCs, competitive prices, and vastly improved technical support put the P5 line ahead of the herd. $1499 to $2244 list, depending on configuration; 800/846-2000, www.gw2k.com

READER SERVICE NO. 788

RUNNER-UP: Micron Millennia line

**Monitor 15"**
**NEC MultiSync XV15+**

Despite increasing competition from the formidable likes of Sony and MAG InnoVision, NEC Technologies' venerable MultiSync line—with its strong name recognition and sharp graphics—continues to dominate both the 15- and 17-inch monitor categories. $399 street; 800/632-4636, www.nec.com

READER SERVICE NO. 789

RUNNER-UP: MAG InnoVision DX15T

**Monitor 17"**
**NEC MultiSync M700**

Released last spring, the M700 was one of NEC Technologies' first monitors based on the new CromaClear technology, which promised better image quality at prices comparable to those of NEC's Trinitron displays. $799 street; 800/632-4636, www.nec.com

READER SERVICE NO. 790

RUNNER-UP: Sony Multiscan 17sell

**Input/Pointing Device**
**Microsoft IntelliMouse**

Here's one mouse that has quickly become the big cheese. Introduced last fall, Microsoft's new IntelliMouse features a wheel/button design that lets documents—such as extra-long Web pages—practically scroll themselves. $84.95 list; 800/426-9400, www.microsoft.com

READER SERVICE NO. 791

RUNNER-UP: Logitech MouseMan 96

**Graphics Accelerator Board**
**Diamond Stealth Video 3D 3000**

When it comes to graphics accelerators, Diamond Multimedia's Stealth Video 3D 3000 series zooms to the top. Diamond's boards get extra points for photo-realistic, high-resolu-

tion color and the ability to play full-screen, full-motion video. $250 to $300 list; 800/468-5846, www.diamondmm.com

READER SERVICE NO. 792

RUNNER-UP: Matrox Millennium

### Fax-Modem
**U.S. Robotics Sportster Voice 28.8**

U.S. Robotics' popular Sportster supports up to 33.6-kbps speeds, Caller ID, multiple voice mailboxes, and full-duplex speakerphone telephony, and it automatically distinguishes between incoming voice and fax calls. $180 street; 800/342-5877, www.usr.com

READER SERVICE NO. 793

RUNNER-UP: Hayes Accura 28.8

### Sound Card
**Creative Labs Sound Blaster AWE32 PnP**

With powerful wavetable audio, 3-D stereo enhancement, and included software for making long-distance calls over the Net, Creative Labs' standard-setting Sound Blaster AWE32 PnP is the sound card to end all sound cards. $249.95 list; 800/998-5227, www.creativelabs.com

READER SERVICE NO. 794

RUNNER-UP: Creative Labs Sound Blaster AWE64

### CD-ROM Drive
**Plextor 12PleX**

Think all CD-ROM drives are alike? Our judges would respectfully disagree, citing Plextor's high-performance 12PleX line of 12X internal and external drives. Available in both tray- and caddy-loading versions, they're favorites for their top speed, reliable performance, attractive prices, and full two-year warranty. $239 to $389 list; 800/886-3935, www.plextor.com

READER SERVICE NO. 795

RUNNER-UP: NEC MultiSpin

### Hard Drive
**Western Digital Caviar**

What's Caviar without a bottle of bubbly? Uncork the champagne and raise a glass to Western Digital, whose extensive line of low-price, high-performance internal EIDE hard drives ranges from 1.6GB to 4GB. $200 to $400 street; 800/832-4778, www.wdc.com

READER SERVICE NO. 796

RUNNER-UP: Seagate Medalist Pro

### Tape Backup Drive
**HP Colorado Memory Systems**

The secret to a long and happy life? Backing up your data regularly, of course. For sensible PC users, Hewlett-Packard's line of Colorado Memory Systems tape backup drives—from the 800MB T1000 to the whopping new 8GB T4000 models will prove nothing short of magnetic. $125 to $199 street; 800/752-0900, www.hp.com

Diamond Stealth Video 3D 3000

READER SERVICE NO. 797

RUNNER-UP: Iomega Ditto

### Recordable CD-ROM Drive
**HP SureStore CD-Writer**

The trend of burning your own CDs is getting hot, thanks to continually falling prices and easier drive installation. Hewlett-Packard's latest SureStore CD-Writer drives burn brightest this year, thanks to an internal 6X CD-ROM reader and 2X CD recorder. SureStore CD-Writer 6020i $589 street; 800/810-0133, www.hp.com

READER SERVICE NO. 798

RUNNER-UP: Pinnacle Micro RCD

### Rewritable Optical Drive
**Panasonic PD-CD**

All other contenders for this title were erased from memory by the debut of Panasonic's PD-CD, which conveniently combines two storage devices in one: a read-only CD-ROM drive and a rewritable 650MB phase-change optical drive. $500 to $600 street; 800/742-8086, www.panasonic.com

READER SERVICE NO. 799

RUNNER-UP: Fujitsu DynaMO 230

Logitech PageScan Color Pro

### Multifunction Device
**HP OfficeJet LX 350**

It's a 600-by-300-dpi printer. A sheetfed scanner. A copier. A fax machine. Hewlett-Packard's OfficeJet has more personalities than Joanne Woodward in *The Three Faces of Eve*—but in this case, all those personas add up to one versatile powerhouse. $550 street; 800/810-0133, www.hp.com

READER SERVICE NO. 800

RUNNER-UP: Canon MultiPass C2500

### Flatbed Scanner
**HP ScanJet 5pse**

For the fourth year in a row, a Hewlett-Packard ScanJet gets our judges' thumbs-up for best flatbed scanner. HP calls the 300-dpi color/gray-scale ScanJet 5pse its first "push-button" scanner: Plop your document on the glass, push the green button, select the document type (photo, text, fax, or other), and the scanner does the rest. $399 street; 800/810-0133, www.hp.com

READER SERVICE NO. 801

RUNNER-UP: Microtek Lab ScanMaker E3

### Sheetfed Scanner
**Logitech PageScan Color Pro**

Logitech's low-price 24-bit color scanner nudges out the popular Visioneer PaperPort Vx for top honors in this category. The PageScan Color Pro features 32-bit scanning software for Windows 95, along with full versions of Adobe PhotoDeluxe and Xerox TextBridge OCR software. $340 street; 800/231-7717, www.logitech.com

READER SERVICE NO. 802

RUNNER-UP: Visioneer PaperPort Vx ▶

HP OfficeJet LX 350

# @Work: Software

### Operating System/ Environment
**Microsoft Windows 95**

Now two years old, Microsoft's Windows 95 is still the operating system to beat—for the moment, at least. Windows NT 4.0 and the next version of Win 95 (code-named Memphis), due out possibly days before 1998, are turning up the heat. $109 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 803

RUNNER-UP: Microsoft Windows NT Workstation 4.0

### Application Suite
**Microsoft Office 97**

Microsoft Office continues its stranglehold on the integrated application suite category. This latest version adds Outlook (formerly Schedule+), a PIM that's integrated right into the Windows desktop. Standard edition $499 street, Professional edition (with Microsoft Access) $599 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 804

RUNNER-UP: Corel WordPerfect Suite 7

### Word Processor
**Microsoft Word 97**

Perpetual World Class winner Microsoft Word now features automatic HTML conversion, support for 3-D effects, an improved set of table tools, and a new Online Wizard. $339 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 805

RUNNER-UP: Corel WordPerfect 7

### Spreadsheet
**Microsoft Excel 97**

Every year we crunch the numbers, and every year we get the same result: Our judges love Microsoft's Excel. The latest version lets multiple users work on the same spreadsheet simultaneously. You can also query Web sites directly and insert the data you get into a cell. $339 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 806

RUNNER-UP: Corel Quattro Pro 7.0

### Professional Database
**Microsoft Access 97**

Microsoft Access gets kudos this year for its new Web hyperlink support, which allows you to browse sites right from a database, and for its Web Wizard, which makes it a snap to transform an Access object into a Web page. $339 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 807

RUNNER-UP: Borland Paradox 7.0

### Fax/Communications Software
**Symantec WinFax Pro 7.5**

Symantec's latest version of WinFax is the first such program that can send faxes through your Internet connection, as opposed to sending them directly to a fax number. $99 street; 800/441-7234, www.symantec.com

READER SERVICE NO. 808

RUNNER-UP: Quarterdeck Procomm Plus 4.0

### Personal Information/ Contact Manager
**Lotus Organizer 97**

Our judges picked Lotus Development's PIM as the program most likely to keep them from forgetting important dates, names, and events. New in Organizer 97: the ability to link or embed OLE objects, such as word processing files and Web addresses, in an Organizer file. $79 list; 800/343-5414, www.lotus.com

READER SERVICE NO. 809

RUNNER-UP: Microsoft Outlook 97

### Utility Collection
**Symantec Norton Utilities 2.0**

Here's the cure for what ails your machine. The latest version of Symantec's system-maintenance and data-recovery software lets you customize a Windows 95 PC without having to visit the dreaded Windows Registry. $79 street; 800/441-7234, www.symantec.com

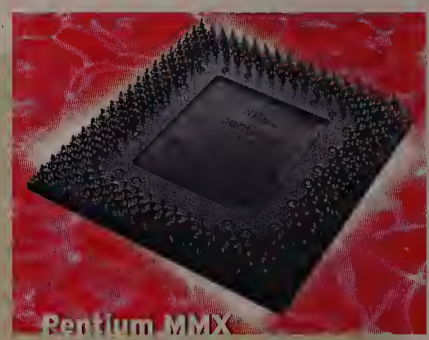
READER SERVICE NO. 810

RUNNER-UP: PowerQuest PartitionMagic 3.0

### Antivirus Utility
**Symantec Norton AntiVirus 2.0 for Windows 95**

Symantec's Norton AntiVirus kills bugs before they become destructive. The latest version includes a helpful wizard

## Newcomers of the Year




It wasn't enough for **Intel's Pentium MMX** to get the Product of the Year award; our judges also named the multimedia-enhanced line of processors Most Promising Hardware Newcomer. But if you've recently bought a PC with a non-MMX chip inside, don't worry about the parade passing you by yet again. Intel recently released Pentium OverDrive processors ($399 and $499 list, depending on clock speed) that will let you upgrade 75-, 90-, and 100-MHz Pentium PCs to include MMX technology.

Had it not been for the MMX chip, runner-up **Microsoft Office 97** would have been crowned Product of the Year. But don't feel sorry for the wizards of Redmond: In addition to being judged Best Application Suite this year, Microsoft Office 97 also copped the Most Promising Software Newcomer award over a formidable competitor, Netscape Navigator 4.0.

that walks you through the repair process. Best of all, the new package makes it easy for you to exterminate critters that try to sneak in through the Internet. $70 street; 800/441-7234, www.symantec.com

READER SERVICE NO. 811

RUNNER-UP: McAfee VirusScan

### Backup Utility

**HP Colorado Background for Windows 95 by Cheyenne**

Hewlett-Packard's backup utility, shipped with all HP Colorado tape drives, gets a slap on the back for its ability to perform full or incremental backups automatically any time you like. Free with Colorado tape drives; 800/810-0133, www.hp.com

READER SERVICE NO. 812

RUNNER-UP: Iomega One-Step

### Accounting

**Intuit QuickBooks Pro 5.0**

With Intuit's QuickBooks Pro, you don't have to think, talk, act, dress, eat, dance, or even look like an accountant to balance your business's books. $199 street; 800/446-8848, www.intuit.com

RUNNER-UP: Peachtree Accounting

### Desktop Publishing

**Adobe PageMaker 6.5**

PageMaker: It's not just for paper anymore. The latest version of Adobe's desktop publishing veteran (and World Class regular) has great tools for designing and publishing Web sites, as well as generating PDF (Adobe Acrobat) files. $549 street; 800/422-3623, www.adobe.com

READER SERVICE NO. 813

RUNNER-UP: Microsoft Publisher 97

### Presentation Graphics

**Microsoft PowerPoint 97**

The judges certainly got their point across in this category: Microsoft's PowerPoint came away with a commanding lead. The 97 version lets you create 3-D effects and generate multiple slides tailored for different audiences, using the same file. $339 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 814

RUNNER-UP: Corel Presentations 7

Lotus Organizer

CorelDraw

### Draw

**CorelDraw 7**

The outcome in this category was hardly a draw: Corel's graphics program wins again, and by a big margin. The latest version adds photo editing, 3-D modeling and rendering, and improved performance. $450 street; 800/772-6735, www.corel.com

READER SERVICE NO. 815

RUNNER-UP: Adobe Illustrator 4.1

### Business Graphics

**Visio 4.0**

Show, don't tell—that's one of many unwritten rules in the business world. Thankfully, business types with no art experience can quickly whip up org charts, floor plans, and other image-intensive documents using Visio's drag-and-drop graphical object library. $140 street; 800/248-4746, www.visio.com

READER SERVICE NO. 816

RUNNER-UP: CorelFlow 3

### Computer-Aided Design

**Autodesk AutoCAD Release 13**

Apparently, the number 13 is good luck for AutoCAD, because that version of the program wins this category for the second time in two years. $3750 list; 800/964-64323, www.autodesk.com

READER SERVICE NO. 817

RUNNER-UP: Corel CAD

Norton AntiVirus

### 3-D Graphics

**Fractal Design Ray Dream Designer 4.2**

According to our judges, Fractal Design's 3-D graphics package is dreamy. It stands out for its low price as well as its support for Microsoft's Direct3D and Apple's QuickDraw 3D. $99 list; 800/846-0111, www.fractal.com

READER SERVICE NO. 818

RUNNER-UP: Caligari trueSpace3

### Image Editing/Paint

**Adobe Photoshop 4.0**

Adobe's Photoshop so dominates the field of photo editing that its name has become a verb. Example: A reader we know recently came upon a picture of veteran model Lauren Hutton in a fashion magazine. "She can't still be that young," the reader said. "They must have Photoshopped her face." $550 street; 800/422-3623, www.adobe.com

READER SERVICE NO. 819

RUNNER-UP: Corel PhotoPaint 7.0

### Forms

**Caere OmniForm 2.0 for Windows 3.1/95**

Caere's OmniForm easily wins this category, thanks to the program's ability to quickly scan existing forms and create new ones with built-in database integration, spell-checking, and spreadsheet-style calculations. $120 street; 800/535-7226, www.caere.com

READER SERVICE NO. 820

RUNNER-UP: JetForm BizForms

### OCR

**Caere OmniPage Pro 7.0 for Windows 95**

Caere's OmniPage—last year's OCR World Class champ—is back. $530 street; 800/535-7226, www.caere.com

READER SERVICE NO. 821

RUNNER-UP: Xerox TextBridge Pro 96 ▶

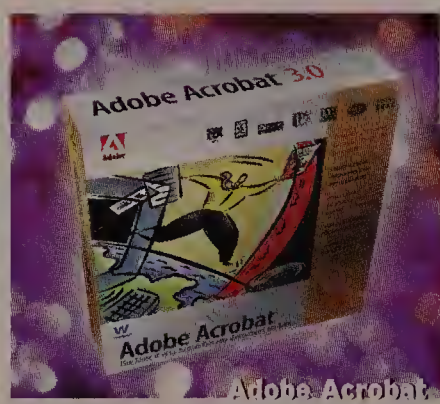
# Work Together

**Network Server**
**Compaq ProLiant line**
Compaq's line of ProLiant workgroup servers continues to get raves for expandability, streamlined design, hot-swappable drives, and server management software. $2799 to $10,995 list; 800/345-1518, www.compaq.com
READER SERVICE NO. 822
RUNNER-UP: Hewlett-Packard NetServer line

**Workgroup Color Printer**
**HP Color LaserJet 5M**
Hewlett-Packard's Color LaserJet 5M earns the top spot for its fast speed, crisp text, and rich color. $5199 street; 800/752-0900, www.hp.com
READER SERVICE NO. 823
RUNNER-UP: Hewlett-Packard DeskJet 1600CM

**Workgroup Monochrome Printer**
**HP LaserJet 5M**
When it comes to printers, the Hewlett-Packard brand name is nothing short of catnip. The LaserJet 5M intoxicated our experts with its sharp print quality, easy-to-use control panel, and built-in ethernet support. $1799 street; 800/752-0900, www.hp.com
READER SERVICE NO. 824
RUNNER-UP: Hewlett-Packard LaserJet 5Si

**LAN Operating System**
**Microsoft Windows NT Server 4.0**
NT Server 4.0's Win 95–like interface helped it overtake




Novell NetWare in our annual battle of the network stars. NT 4.0's support for Peer Web Services didn't hurt, either. (PWS is a subset of Microsoft Internet Information Server, which lets desktop users publish Web pages on corporate intranets without a dedicated Web server.). $319 list; 800/426-9400, www.microsoft.com
READER SERVICE NO. 825
RUNNER-UP: Novell NetWare 4.11

**Application Environment**
**Lotus Notes 4.5**
As they did last year, our judges found few groupware apps in a class with Lotus's Notes. Version 4.5 offers an even tighter fit with Windows NT and Microsoft Exchange, plus the ability to forward Web pages to coworkers. Starter kit $1249 street; 800/575-6887, www.lotus.com
READER SERVICE NO. 826
RUNNER-UP: Microsoft Exchange Server 4.1 for NT

**Group Discussion**
**Lotus Notes 4.5**
Version 4.5's tighter integration with Windows NT and the ability to forward Web pages to colleagues certainly help Notes keep its hold on this category. Starter kit $1249 street; 800/828-7086, www.lotus.com
READER SERVICE NO. 826
RUNNER-UP: AttachMate OpenMind 3.0 for Windows NT

**Document/Videoconferencing**
**Microsoft NetMeeting 2.0**
Microsoft's real-time communications tool sent last year's winner, Intel ProShare Video Conferencing System 200, packing. This new version, a free download, lets Windows 95 and NT users reach out and see each other over the Net. You can use it to communicate with anyone else using a videoconferencing program that supports the H.323 standard. Free download; www.microsoft.com/netmeeting
READER SERVICE NO. 827
RUNNER-UP: Intel ProShare Video Conferencing System 200 2.0

**Electronic Document Distribution**
**Adobe Acrobat 3.0**
Last year's winner has matured from a popular electronic document program into a required tool in practically every Webmaster's kit. Single-user license $295 list, ten-user license $1595 list; 800/272-3623, www.adobe.com
READER SERVICE NO. 828
RUNNER-UP: Common Ground 2.0

**Project Manager**
**Microsoft Project 95**
Getting your act together is a breeze with Microsoft's Project 95. It gets overwhelming applause from our experts for its ease of use and powerful scheduling and task management tools. $469 street; 800/426-9400, www.microsoft.com
READER SERVICE NO. 829
RUNNER-UP: Primavera SureTrak Project Manager 1.5 ▶

**METHODOLOGY** Last February we mailed World Class ballots to 2000 selected *PC World* subscribers, computer professionals, and user group members, asking them to vote for the top products in 84 categories. The products listed on the ballot were nominated by *PC World* editors, with the exception of CD-ROMs, Business Web Site, Recreational Web Site, and Loser of the Year, which were exclusively write-in candidates. Our thanks to our sister publication *InfoWorld* for supplying the list of computer professionals, and to Pete Grant at User Group Connection for providing access to user groups.

# NOW YOU SEE IT BETTER.

## TeleVideo WebOptimized Monitors

Introducing TeleVideo's SuperView Series™ and Super-View Pro Series™. A complete line of feature rich color monitors – WebOptimized for your comfort and reliability. Our finely crafted monitors have the highest horizontal frequency up to 107KHz, a dot pitch as fine as 0.26mm, flicker-free refresh rates, digitized on-screen controls with memory recall and more. The spectacular specifications of our monitors allow you to comfortably enjoy razor-sharp images and exquisite shapes with optimum brilliance and vivid detail. As a leader in display technology for over two decades, we know how to optimize our monitors to make them ideal for the Web. Now you can enjoy the ever-evolving digital world of the Internet, DVD, desk-top publishing, high-end CAD and more. Break through all your conceptual horizons with TeleVideo.

TeleVideo®

Over 20 years of display technology working for you.

Call your favorite reseller today or call us at 1-800-835-3228 x 474 or 408-954-8333. Or, visit our website: www.televideoinc.com.

| 15" Models | Dot Pitch (mm) | Max. Res. (HxV) | H-Scan (KHz) | ERP ($) | 17" Models | Dot Pitch (mm) | Max. Res. (HxV) | H-Scan (KHz) | ERP ($) | 21" Models | Dot Pitch (mm) | Max. Res. (HxV) | H-Scan (KHz) | ERP ($) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TeleVideo SV100** | **0.28** | **1280x1024** | **30-70** | **349** | **TeleVideo SV210** | **0.26** | **1280x1024** | **30-70** | **568** | **TeleVideo SVP350** | **0.28AG** | **1600x1200** | **30-107** | **1889** |
| PanaSync E15 | 0.27 | 1024x768 | 30-61 | 399 | NEC XV17+ | 0.28 | 1280x1024 | 31-65 | 850 | NEC P1150 | 0.28AG | 1600x1200 | 31-94 | 2079 |
| Mag InnoVision DX1595 | 0.28 | 1280x1024 | 30-65 | 429 | PanaSync S17 | 0.27 | 1280x1024 | 30-69 | 799 | Sony CPD300SF | 0.30AG | 1600x1200 | 30-85 | 1999 |
| Viewsonic 15GS | 0.28 | 1280x1024 | 30-69 | 429 | ViewSonic 17GS | 0.27 | 1280x1024 | 30-69 | 699 | ViewSonic PT810 | 0.30AG | 1600x1200 | 30-96 | 1899 |

© 1997 TeleVideo, Inc. The TeleVideo name and logo are registered trademarks and SuperView is a trademark of TeleVideo. All other names are the service mark, trademark or registered trademarks of their respective owners. TeleVideo reserves the right to change specifications without notice.

Circle 222 on reader service card

IBM ThinkPad 760

# On the Road

**Power Notebook**
**IBM ThinkPad 760**
Big Blue is white-hot with its sleek black notebooks. The ThinkPad 760's big screen and generous features prove that it's possible to have style *and* substance. $2400 to $5400 list; 800/426-2968, www.pc.ibm.com
RUNNER-UP: Toshiba Tecra 730CDT

U.S. Robotics PalmPilot

**Budget Notebook**
**Toshiba Satellite Pro line**
High-end features and low-cost design make Toshiba's Satellite Pro line a winner for taking multimedia on the road. $2100 to $3400 list; 800/457-7777, www.computers.toshiba.com
READER SERVICE NO. 830
RUNNER-UP: Gateway 2000 Solo 2100 P120

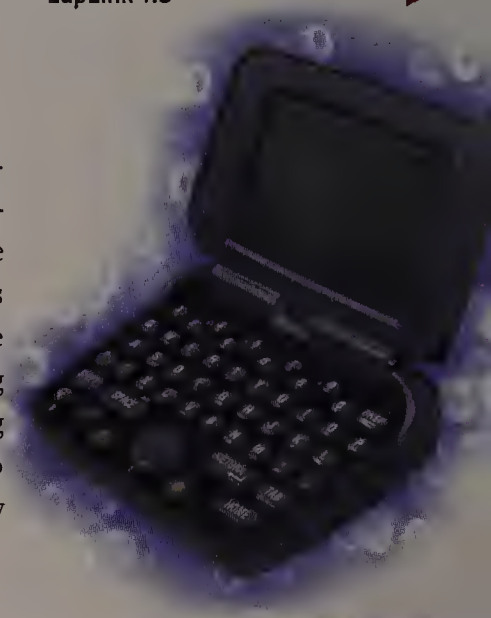
**Personal Digital Assistant**
**U.S. Robotics PalmPilot**
Agent 007 would feel at home with U.S. Robotics' PalmPilot—a cool, versatile palmtop with built-in organizer tools and the ability to synchronize files with a PC. Best of all, this pen-based gadget fits easily into a trench coat pocket, right next to that laser stun gun. Professional Edition $399 list, Personal Edition $299 list; 800/527-8677, www.usr.com
READER SERVICE NO. 831
RUNNER-UP: Casio Cassiopeia

**Wireless Communications Device**
**Motorola PageWriter**
Paging became a two-way street when Motorola introduced its PageWriter last fall. With the help of its built-in QWERTY keyboard and display, you can now send as well as receive text messages anywhere—from an office to a beach blanket. $399 list; 817/548-9954, www.mot.com
READER SERVICE NO. 832
RUNNER-UP: Megahertz All-Points Card

**PC Card Modem**
**U.S. Robotics Sportster PC Card**
The Sportster is the clear winner in this slot, disconnecting last year's victor, the Hayes Optima. A free downloadable software upgrade from U.S. Robotics' Web site brings this PC Card modem up to a full 33.6 kbps—perfect for mobile PC users hooked on speed. $179.95 list; 800/527-8677, www.usr.com
READER SERVICE NO. 833
RUNNER-UP: Megahertz XJ4336

**Removable Media/ Portable Drive**
**Iomega Zip**
Despite increasing competition, Iomega's portable, affordable Zip drive remains the most popular choice. The Zip's inexpensive, floppy disk–size cartridges are ideal for backing up on the road or playing sneakernet in the office. $150 street; 800/697-8833, www.iomega.com
READER SERVICE NO. 834
RUNNER-UP: Iomega Jaz

**Remote Access/ Remote Control Software**
**Symantec pcAnywhere32 7.5**
pcAnywhere32 is the program of choice for those who need to access or control a remote PC. The latest version of Symantec's package provides expanded Internet connection capabilities and support for ISDN and infrared links. Host and remote two-user package $149 list; 800/441-7234, www.symantec.com
READER SERVICE NO. 835
RUNNER-UP: Traveling Software LapLink 7.5 ▶


Motorola PageWriter

## Loser of the Year

Here's a metaphysical question to ponder: Is **America Online** the service we love to hate—or the service we hate to love?

Either way you look at it, our World Class judges are definitely of two minds when it comes to "America Offline"—winner of our dubious Loser of the Year award as well as recipient of our Best Online Service honors. On the plus side, AOL's colorful interface makes it easy to navigate; it offers more information than you could ever digest; and now, for $19.95 a month, you get unlimited access to both AOL's content and the entire Internet. What more could you want?

Well, let's see. How about reliability? Since it started offering flat-rate monthly service in December 1996, AOL has been frantically trying—and often failing—to keep up with demand, resulting in service overloads that can last hours. Angry customers unable to make or keep a connection filed suit, demanding refunds.

Clearly, AOL's reputation has taken a beating. The good news is that the company is spending $350 million to expand its network, personnel, and facilities, and holding the subscriber base to its current levels. If all goes well, next year we won't be able to kick AOL around anymore.

# Finally, a color laser printer loaded with features, starting at $3500.

## The Xerox DocuPrint C55 Network Color Laser Printer.

*A different line of thinking.*

**A breakthrough price, a surprisingly small footprint, and ingenious new features for the networked office.**

Now you can afford the quality and speed of color laser technology along with breakthrough convenience features that save time and effort.

The Adobe® PostScript® option includes exclusive features like Fax Friendly Black that converts color to patterns of black and white so they're readable when faxed. ImageFix enhances imperfect photos.

*3 ppm color*
*6 ppm fast blue*
*12 ppm black*
*600 dpi*
*(Less than 10¢ per page, full color.)*

And Fast Blue prints quick drafts in shades of blue and black.

With our new CentreWare Internet Services, you can manage and maintain network printers over the web.

So, for an exceptional value in color laser printing, think differently. Call for product literature and print samples. 1-800-34-XEROX ext. 2961. In Canada, 1-800-ASK-XEROX ext. 2961. Or stop by http://xerox.networkprinters.com and see our powerful new line of network laser printers.

THE DOCUMENT COMPANY

XEROX

**Circle 257 on reader service card**

Stated price is the estimated U.S. street price for the base model.

Xerox®, The Document Company®, the stylized X are trademarks of XEROX CORPORATION. Adobe® and PostScript® are trademarks of Adobe Systems Incorporated. Adobe® PostScript® option sold seperately.

# Introducing PC Dolby Surround Sound
# *NEW SOUND* Generation

## A Complete Speaker System for MULTIMEDIA & DVD

You're in the cockpit as jet-fighters thunder overhead…behind the wheel, you'll thrill as race cars roar by…train burst through your room with the fury of a tornado! They'll seem to ZOOM through the room! Oh yeah—your music will sound great too!

SSI introduced the FIRST surround sound processor as the first licensee of Dolby Surround sound technology fifteen years ago. Awarded the coveted Innovations '97 Design & Engineering Showcase Honors, specially designed MTS-100 ***"NEW SOUND"*** for multimedia PC will let you experience the action and excitement you've been missing. For under $200, MTS-100 promises you the audiophile quality sound at an incredible price.

**OUTSTANDING FEATURES:**

- Five Satellite Speakers
- Room Rumbling Active Subwoofer
- Five Independent Hi-Fi Quality Amplifiers
- True Dolby Surround Pro Logic Processor
- Works with any Multimedia PC Sound Card
- Compatible with CD-ROM, DVD, TV-tuner and Video Game Systems
- Dolby AC-3 Analog Ready
- High Quality with an Incredible Price

DOLBY SURROUND PRO • LOGIC

To learn more about MTS-100, visit our website at **www.ssihtp.com** or call us at toll free **1-800-845-4774.**

SSI SURROUND SOUND™

**SSI Products, Inc.**
11836 Clark Street
Arcadia, CA 91006

Tel: 626-305-0500
Fax: 626-305-0201
E-mail: info@ssihtp.com

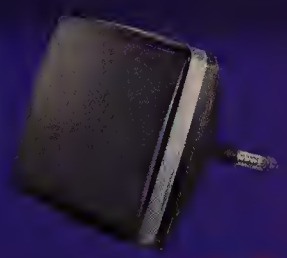
FEEL THE NEW SOUND

"Surround Sound" and the "SSI Surround Sound" symbol are trademarks of SSI Products, Inc.
"Dolby," the Double-D and "Pro Logic" are trademarks of Dolby Laboratories Licensing Corp.

**Circle 200 on reader service card**

# A breakthrough so visually advanced it leaves mere specs behind.

The MICROFILTER cathode ray tube is a brilliant breakthrough based on Toshiba's totally new approach to visual technology — relying far more on innovation than improved specifications. The result is a 30% increase in both brightness and contrast over our conventional CRTs. MICROFILTER utilizes original Toshiba technology — forming the micro-particulated material layer with primary color filters. Thus, shadow mask technology advances to a whole new level, surpassing even the aperture grill technique. Moving images are clear and bright; text is sharp and readable. In other words, MICROFILTER technology realizes the full visual potential of multimedia. Break through to a new level of brightness and contrast. The Toshiba MICROFILTER CRT.



microfilter CRT

More That Meets the Eye

http://www.toshiba.com/taec

In Touch with Tomorrow

TOSHIBA

Toshiba America Electronic Components, Inc., Electron Tube and Device Division
One Pkwy., North, Suite 500, Deerfield, IL 60015, U.S.A. Tel: (847) 945-1500 Fax: (847) 945-1044

Circle 234 on reader service card

Canon PowerShot 600

# @Home

### Home Desktop Computer
**Gateway 2000 Family PC line**

Gateway's aggressively priced PCs are built to spec with an enticing array of features and 24-hour tech support. To that, our judges say, "Cowabunga!" $1599 to $2869 list; 800/846-2000, www.gw2k.com

READER SERVICE NO. 836

RUNNER-UP: Dell Dimension line

### Personal Color Printer
**HP DeskJet 820 line**

Talk about color—our judges were tickled pink with this Hewlett-Packard line. $400 street; 800/810-0133, www.hp.com

READER SERVICE NO. 837

RUNNER-UP: Epson Stylus Color 500

### Personal Monochrome Printer
**HP LaserJet 6P/6MP**

The 6P and 6MP raise the bar on last year's winners, Hewlett-Packard's LaserJet 5 and 5M models, by delivering 8-ppm print speeds and enhanced graphics features. 6P $799 street, 6MP $950 street; 800/810-0133, www.hp.com

READER SERVICE NO. 838

RUNNER-UP: Hewlett-Packard LaserJet 5L Xtra

### Digital Camera
**Canon PowerShot 600**

Picture this: Canon's digital camera captures images that are almost as rich and detailed as their film equivalents. $799 street; 800/848-4123, www.ccsi.canon.com

READER SERVICE NO. 839

RUNNER-UP: Epson Photo PC

### Personal Finance
**Intuit Quicken Deluxe 6**

Here's another one for the "no wonder Microsoft tried to buy Intuit" file. Nearly 90 percent of our judges picked Intuit's Quicken in this category. $60 street; 800/446-8848, www.intuit.com

RUNNER-UP: Microsoft Money 97

### Tax Planning/Preparation
**Intuit TurboTax Deluxe**

There are only three certainties in life: death, taxes, and Intuit's hammerlock on this category. TurboTax Deluxe's video clips and planner can take away a lot of tax-time pain. But as for that first certainty we mentioned, you're on your own, kid. $50 street; 800/816-8025, www.intuit.com

RUNNER-UP: Parsons Personal TaxEdge

### Personal Database
**Microsoft Access 97**

With this version of Microsoft's database application, you can embed hyperlinks to Web sites within text labels, pictures, buttons, forms, and reports. $339 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 840

RUNNER-UP: Lotus Approach 97

### Shareware/Freeware
**McAfee VirusScan**

Working in the background, McAfee's VirusScan does a search and destroy of all nasty gremlins it finds. Free trial for 30 days, registered version $65 list; 408/988-3832, www.mcafee.com

READER SERVICE NO. 841

RUNNER-UP: Microsoft Power Toys for Windows 95

### CD-ROM: Reference
**Microsoft Encarta 97**

Microsoft's perennial World Class winner now has longer video clips and free monthly Web updates in its Deluxe version. Deluxe edition $65 street, Standard edition $55 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 842

RUNNER-UP: Microsoft Bookshelf 1996-97 Edition

### CD-ROM: Entertainment
**Microsoft Flight Simulator**

Microsoft's Flight Simulator has soared to the top for over 15 years. $50 street; 800/426-9400, www.microsoft.com

Duke Nukem and friends

READER SERVICE NO. 843

RUNNER-UP: Berkeley Systems You Don't Know Jack

### CD-ROM: Adult Game
**Duke Nukem 3D**

Murderous aliens have landed in Los Angeles. Blast 'em! $39.95 list; Apogee, 800/337-3256, www.3drealms.com

READER SERVICE NO. 844

RUNNER-UP: Brøderbund Myst

### CD-ROM: Children's Game
**Where in the USA is Carmen Sandiego?**

Ms. Sandiego's trips are a clever way to teach kids geography. $34 street; Brøderbund Software, 800/521-6263, www.broderbund.com

READER SERVICE NO. 845

RUNNER-UP: Maxis SimCity 2000

Intuit Quicken Deluxe

### CD-ROM: Adult Education and Training
**Mavis Beacon Teaches Typing 5.0**

Ms. Beacon's engaging games can teach anyone to type. $40 street; Mindscape, 800/234-3088, www.mavisbeacon.com

READER SERVICE NO. 846

RUNNER-UP: Asymetrix ToolBook II

### CD-ROM: Children's Education
**JumpStart series**

Brain teasers, music, and other age-appropriate activities give young children an educational boost. $35 street per disc; Knowledge Adventure, 800/542-4240, www.adventure.com

READER SERVICE NO. 847

RUNNER-UP: Learning Company Reader Rabbit ▶

DESKTOP TO GO™

# Synchronize

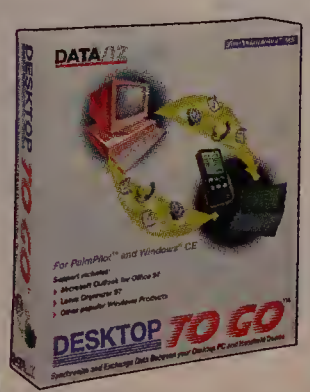
## . . . and exchange data between your desktop PC and PalmPilot™ or Windows® CE Handheld Device in one easy step.

### Organization has never been this easy.

With the power of **Desktop To Go**™, you can synchronize, exchange and share data between your handheld and personal information managers. Contacts, appointments and tasks can be brought down to your hand-held device in **one simple step.** Moreover, any modifications – additions, deletions, changes – are automatically updated on both platforms.

### Plug and perform.

In addition to providing synchronous capabilities for Windows CE, **Desktop To Go** provides word processing and spreadsheet translators for Pocket Word and Pocket Excel, so various Windows-based documents can be converted between the two platforms while retaining their original formatting, including bold, *italics,* embedded graphics and more.




To learn more, or to purchase **Desktop To Go,** visit **http://www.dataviz.com/desktoptogo** or call

**(800) 270-0030, ext. 204.**

Or ask for it at your favorite retail location.

Supports Microsoft Outlook™ 97

**DATAVIZ®**

**Makers of Conversions Plus & E-ttachment Opener**

*Windows CE and PalmPilot Support Includes: • Microsoft Outlook™ for Office 97 • Lotus Organizer 97 • Other Popular Products for Windows.*

**Circle 80 on reader service card**

# Online

### Online Service
**America Online**

Talk about a love/hate relationship: This year AOL was voted the top online service—and the Loser of the Year as well. AOL's graphical interface and wide array of content scored high with our panel. Now if only you could log on. $19.95 per month unlimited access; 800/827-6364, www.aol.com

READER SERVICE NO. 848

RUNNER-UP: CompuServe

### Internet Service Provider
**AT&T WorldNet Service**

Aside from the fact that WorldNet's sign-up software is being preloaded onto many new PCs, AT&T's service also gets high marks for reliable connections. $19.95 per month unlimited access; 800/967-5363, www.att.com/worldnet

READER SERVICE NO. 849

RUNNER-UP: Netcom

### E-Mail Software
**Netscape Mail**

Netscape Navigator's built-in e-mail feature gets the prize for convenience—you can send and receive messages without switching to another app. $49 list for Navigator; 800/638-7483, www.netscape.com

READER SERVICE NO. 850

RUNNER-UP: Qualcomm Eudora Pro 3.0

### Web Browser
**Netscape Navigator 3.0**

Browser wars? What browser wars? When it came to Web surfing, our judges clicked with Netscape's Navigator. $49 list; 800/638-7483, www.netscape.com

READER SERVICE NO. 850

RUNNER-UP: Microsoft Internet Explorer 3.0

### Browser Plug-In
**Adobe Acrobat Reader 3.0**

Working closely with Web browsers, Adobe's plug-in lets you view an Acrobat document one page at a time without downloading the entire file. Free download; www.adobe.com

READER SERVICE NO. 851

RUNNER-UP (TIE): Macromedia Shockwave, Progressive Networks Real Audio 3.0

Microsoft FrontPage

### Offline Browser/Search Tool
**Symantec Internet FastFind**

A friendly interface and the ability to query multiple search engines at once make this Symantec tool a winner. $50 street; 800/441-7234, www.symantec.com

READER SERVICE NO. 852

RUNNER-UP: Forte Free Agent 1.0

### Internet Utility
**Pretty Good Privacy 2.6**

This high-security encryption tool thwarts would-be snoops by scrambling e-mail so only intended recipients can read it. Free download; web.mit.edu/network/pgp.html

RUNNER-UP: Starfish Internet Utilities

### News/Information Services
**PointCast Network 1.1**

PointCast, the epitome of the hot new "push" technology, broadcasts news headlines, stock quotes, weather, and sports onto your PC. Free download; www.pointcast.com

RUNNER-UP: My Yahoo

### Web Search Site
**AltaVista (www.altavista.digital.com)**
**Yahoo (www.yahoo.com)**

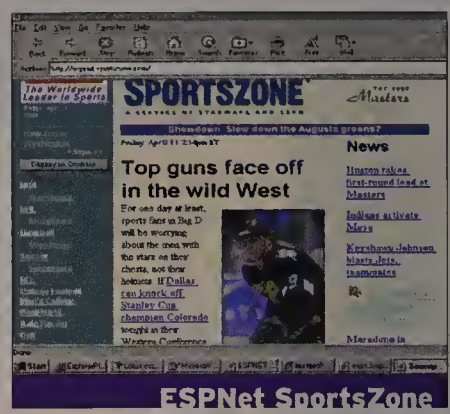
AltaVista is a no-nonsense site for performing both simple and advanced searches, while Yahoo is a cheeky Web catalog.

RUNNER-UP: Excite

### Business Web Site
**Microsoft.com (www.microsoft.com)**

Where do you want to go for the latest software patches, drivers, updates, tips, and news about all of those Microsoft programs you use? The Microsoft Web site, natch.

RUNNER-UP: CNN.com




### Recreational Web Site
**ESPNet SportsZone (espnet.sportszone.com)**

ESPN, the cable sports channel, scores a home run for its Web venture.

RUNNER-UP: Yahoo

### Web Authoring Tool
**Microsoft FrontPage 97**

Learning HTML to create a Web site has made otherwise pleasant people cranky. Microsoft's FrontPage 97 lets you drag, drop, and click a site into reality—without knowing any HTML. $149 street; 800/426-9400, www.microsoft.com

READER SERVICE NO. 862

RUNNER-UP: Netscape Navigator

# Service & Support

### Software Support
**Microsoft**

By offering extensive, searchable help libraries within its software applications, plus a toll-free tips line, a download service on the Internet, and quick response on its help lines, Microsoft gets top honors for its support services.

RUNNER-UP: Intuit

### Hardware Support
**Dell Computer, Gateway 2000**

Practically every month, Dell and Gateway PCs make our Top 20 Power and Budget Desktops lists, thanks in no small part to the companies' superb technical support policies. Both offer toll-free technical support 24 hours a day, seven days a week, and both provide a three-year warranty on parts.

RUNNER-UP: Hewlett-Packard

### Mail-Order Service
**PC Connection**

Combining wide product selection with speedy, low-cost service, PC Connection has become a perpetual World Class winner. 800/800-0004, www.pcconnection.com

RUNNER-UP: PC Direct

*James A. Martin is a contributing editor for* PC World. ■

A handful of companies create great PC's.

# Only Quantex creates great PC's **for less.**

MMX™ intel inside pentium® II PROCESSOR

QUANTEX GOOD CHOICE.℠

The Quantex PC.

# No one creates longer lasting

Let's be honest. Technology never stands still. And even the greatest PC you can buy today may need upgrading tomorrow.

With one notable exception - A Quantex. Because only a Quantex affordably offers you advanced technology like Intel's latest Pentium® II Processor, DVD, Universal Serial Bus and K56flex™ modems. And because of Quantex's quality system designs, you'll enjoy advanced performance for longer and for considerably less than you'd pay for any other great PC.

## Pentium® II processor

The highest-performing Intel processor. Combines the power of a Pentium® Pro processor with the magic of MMX™ technology. At 266MHz, this processor is capable of delivering nearly two times the processing power over a 200MHz Pentium® processor.

**We create advanced technology.** We work only with recognized industry leaders at the design stage to ensure we always have advanced, proven technology.

**We create enhanced performance.** Meticulous engineering and use of top-performing , name-brand-only components ensures that the performance characteristics of every Quantex PC are unrivaled. And, all systems are built in ISO 9002 certified manufacturing facilities so quality is assured.

**We create uncompromising service.** We deliver the finest technical support in the business with hundreds of highly-trained professionals on call 24-hours a day, seven days a week to help you. No recordings here.

**We create value.** We deliver the best value in the PC industry, hands down. When you consider our purchasing power, fast inventory turnover and the lowest overhead in the business, our value offering simply cannot be outdone.

Check out our technology-packed QP6/SM-4x for an incredible $2,999.

**PC World 5/97**

"With a PC WorldBench score of 230, this minitower is one of the fastest (200MHz Pentium processor-based) system we've seen."

# performance for less.

Conforming to the K56flex™ standard that has been endorsed by more than 400 leading high-tech companies, you'll be surfing the Internet up to twice as fast as with most modems.

Where video CD and high-capacity CD-ROM converge. DVD will turn your PC into a home theater experience by providing superb quality audio and video. MPEG-2 compression and Dolby ProLogic Surround Sound are the backbone behind the experience.

Finally, true plug & play. No more IRQ or COM port conflicts when it comes to connecting hardware. Two USB ports come standard on most Quantex systems so you can take advantage of the new, hot USB peripherals.

## Top Power Bargain

**PC World 6/97**

"The Quantex QP6/266 SM-4x will make power-hungry buyers think they have died and gone to heaven."

## QP6/266 SM-4x

*(featuring the Pentium® II Processor)*

**$2999** Business lease:$ 105/Mo.

- 266MHz Pentium® II Processor
- 2 Universal Serial Bus (USB) Ports
- 64MB EDO Memory /512KB Secondary Cache
- 6.4GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- Matrox Millennium 3D w/4MB WRAM
- 17" Digital Monitor (16.1" viewable)
- K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone
- Toshiba 16X Max 95ms EIDE CD-ROM Drive
- Midi Wavetable Stereo Sound
- Altec Lansing ACS-45 Speakers w/subwoofer
- ATX Case
- 104-Key Keyboard with MS IntelliMouse
- MS Windows '95 with MS Plus
- NEW! ▶ MS Office 97 Small Business Edition
- 3-year limited warranty, 24-hr./7-day Technical Support

QP5/233 SM-4 (with MMX™ Technology).....$2799
QP6/200 SM-4 (with Pentium® Pro processor)...$2699
QP6/233 SM-4x(featuring Pentium II processor)..$2899

### DVD Upgrade Package

- Toshiba DVD ROM (upgrade from 16X Max CD-ROM)
- DVD Decoder Board
- Altec Lansing ACS-500 Speakers w/ ACS-250 subwoofer (upgrade from ACS-400 Speakers)

**Add $569**

**C Computing 4/97**

he best priced MMX(™ technology) machine you'll - and it's loaded with extras."

ner of ★★★★★ *rating.*

**Home PC 6/97**

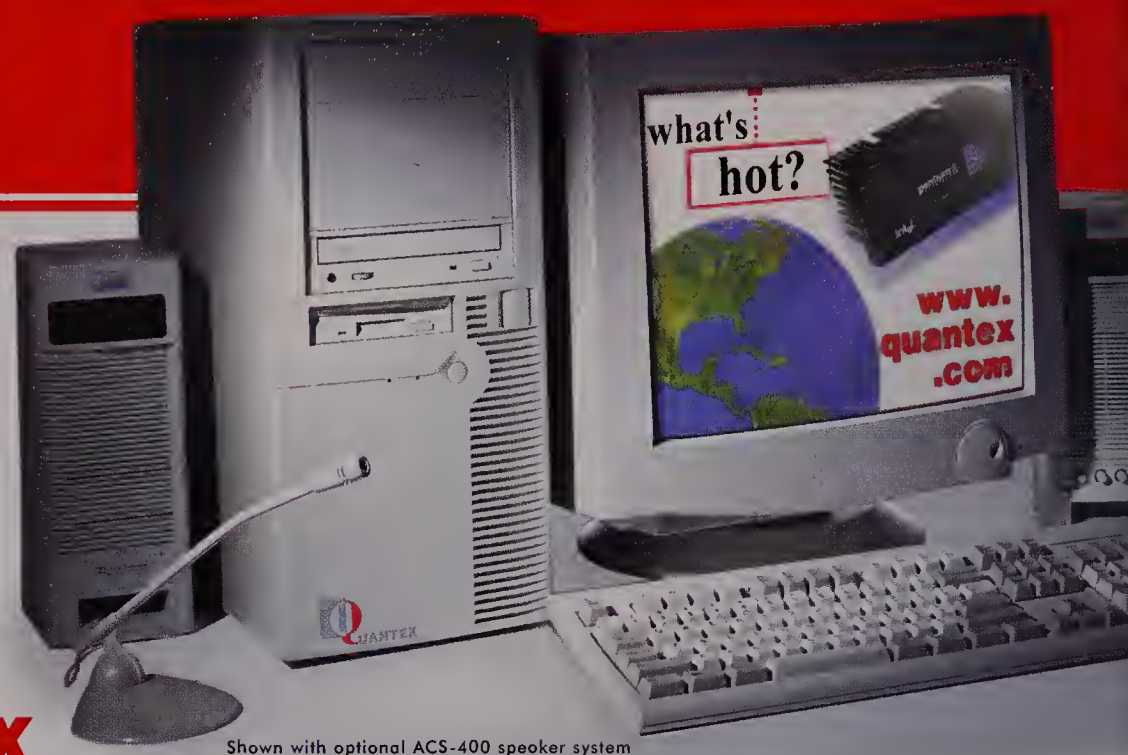
"Quantex has a reputation for delivering computers that pack a punch, and the QP5/200 SM-3 with MMX™ (technology) is no exception."

GOOD CHOICE.℠

**1.800.896.4898**

**www.quantex.com**

# No one engineers more multimedia power.




Shown with optional ACS-400 speaker system

**Best Value!**

## QP6/266 SM-4x

***(featuring Pentium® II processor)***

**$2999** Business lease:$ 105/Mo.

- 266MHz Pentium® II Processor
- 2 Universal Serial Bus (USB) Ports
- 64MB EDO Memory / 512KB Secondary Cache
- 6.4GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- Matrox Millennium 3D w/4MB WRAM
- 17" Digital Monitor (16.1" viewable)
- K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone
- Toshiba 16X Max 95ms EIDE CD-ROM Drive
- Midi Wavetable Stereo Sound
- Altec Lansing ACS-45 Speakers w/subwoofer
- ATX Case
- 104-Key Keyboard With MS IntelliMouse
- MS Windows '95 With MS Plus

NEW!▶ MS Office 97 Small Business Edition

- 3-year limited warranty, 24-hr./7-day Technical Support

QP5/233 SM-4 (with MMX™ Technology).....$2799
QP6/200 SM-4 (with Pentium® Pro Processor*)....$2699
QP6/233 SM-4x (featuring Pentium® II Processor)...$2899

Being the first to market with the latest products and technologies may seem like no big deal. But it is. By purchasing a PC with the most up-to-date products, you will significantly extend the life of your PC and of your hard-earned investment. Check out what Quantex is first to market with this month:

### The Pentium® II processor Delivers a Performance Punch

Quantex systems powered by the Pentium II processor deliver the horsepower you need for realistic graphics, full-screen, full-motion video enhanced color and more. At clock speeds up to 266MHz, the Pentium II processor has the performance for today's and tomorrow's software. It's your best choice for both integer performance for productivity and floating point performance for compelling 3D graphics.

MMX™ intel inside pentium® PROCESSOR

### Did You Know ?

**Quantex PC's consistently offer top-notch performance and usability.**

Along with many other awards, Quantex was recently awarded PC Computing's coveted "★★★★" 4-star rating in both May and June, 1997!

## UPGRADES (available with system purchase)

- Special DVD Upgrade ..... See Below
- Panasonic PD/CD-Rom Drive w/ one 650MB PD cartridge.. $279
- Three(3) Panasonic PD cartridges ..... $99
- APC Back UPS Office (price reflects $30 manuf. rebate)... $169
- 3Com 3c905 PCI NIC ..... $89
- Motorola ISDN Terminal Adapter ..... $189
- Microsoft Natural Keyboard (upgrade from 104-keyboard) .. $39
- Microsoft Sidewinder 3D Pro Joystick ..... $59
- HP Deskjet 692C Printer (w/ photo color kit) ..... $299
- HP Laserjet 5L-FS Printer ..... $399

(all upgrades are covered by manufacturer's warranty)

### Surf the Web at two times the speed

Utilizing the most widely-accepted standard, K56flex™ adopted by over 400 leading high-tech companies, your days of patiently waiting for files to download are over. K56flex technology was specifically created to allow you to download as much information as quickly as possible.

### Hop on the Newest PC Bus

Say goodbye to IRQ and COM port conflicts when adding hardware. Most Quantex systems now come standard with two Universal Serial Bus ports so you can take advantage of the newest USB peripherals like digital cameras, joysticks and more.

### DVD - A Whole New World

You've read all the hype, but now it's really here. Quantex is proud to be among the first to offer this revolution in CD technology. DVD (Digital Video Disk) technology offers unsurpassed video and outstanding audio, Add to that an enormous 4.7GB storage capacity. Experience movies and multimedia in a whole new way.

### DVD Upgrade Package:

- Toshiba® DVD ROM (upgrade from 16X Max CD-ROM)
- DVD Decoder Board
- Altec Lansing ACS-500 Speakers w/ACS-250 subwoofer (upgrade from speakers in system purchase)

| Your system purchase: | SM-1 or SM-2 | SM-3 or SM-4 |
|---|---|---|
| DVD Upgrade Package Cost: | $599 | $569 |

## MS OFFICE 97 SMALL BUSINESS EDITION

- Word 97 ■ Excel 97 ■ Outlook 97 ■ Publisher 97
- AutoMap Streets ■ Small Business Financial Manager

# Power Multimedia Series

## QP5/166 SM-1 (with MMX™ Technology) $1799

Business lease: $63/Mo.

- 166MHz Pentium® Processor with MMX™ Technology
- 2 Universal Serial Bus (USB) Ports
- 32MB EDD Memory / 512KB Pipelined Burst Cache
- 3.2GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- Matrox Mystique 220 3D w/4MB SGRAM (Free 3D game included!)
- 15" Digital Monitor (14.0" viewable)
- K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone
- Toshiba 16X Max 95ms EIDE CD-RDM Drive
- Midi Wavetable Stereo Sound
- Altec Lansing ACS-90 Speakers
- Mid-Tower Case
- 104-Key Keyboard With MS IntelliMouse
- MS Windows® '95 With MS Plus
- NEW! ▶ MS Dffice 97 Small Business Edition
- 3-year limited warranty, 24-hr./7-day Technical Support

QP5/200 SM-1 (with MMX Technology)..... $1999
QP6/200 SM-1 (with Pentium® Pro Processor*).... $2099

## QP6/200 SM-2 $2199

Business lease: $77/Mo.

- 200MHz Pentium® Pro Processor
- 2 Universal Serial Bus (USB) Ports
- 32MB EDD Memory /256KB Internal L2 Cache
- 3.2GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- Matrox Mystique 220 3D w/4MB SGRAM (Free 3D game included!)
- 17" Digital Monitor (16.1" viewable)
- K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone
- Toshiba 16X Max 95ms EIDE CD-ROM Drive
- Midi Wavetable Stereo Sound
- Altec Lansing ACS-90 Speakers
- ATX Case
- 104-Key Keyboard With MS IntelliMouse
- MS Windows '95 With MS Plus
- NEW! ▶ MS Office 97 Small Business Edition
- 3-year limited warranty, 24-hr./7-day Technical Support

QP5/233 SM-2 (with MMX™Technology)..... $2299
QP6/233 SM-2x (featuring Pentium® II Processor)...$2399

**Best Value!**

## QP6/233 SM-3x (featuring Pentium® II processor) $2499

Business lease: $87Mo.

- 233MHz Pentium II Processor
- 2 Universal Serial Bus (USB) Ports
- 32MB EDO Memory /512KB Secondary Cache
- 4GB EIDE Mode 4 HD / 3.5" 1.44MB Floppy Drive
- Matrox Millennium 3D w/4MB WRAM
- 17" Digital Monitor (16.1" viewable)
- K56flex™ protocol Fax/Modem w/Voice Mail and Speakerphone
- Toshiba 16X Max 95ms EIDE CD-RDM Drive
- Midi Wavetable Stereo Sound
- Altec Lansing ACS-45 Speakers w/subwoofer
- ATX Case
- 104-Key Keyboard With MS IntelliMouse
- MS Windows '95 With MS Plus
- NEW! ▶ MS Dffice 97 Small Business Edition
- 3-year limited warranty, 24-hr./7-day Technical Support

QP5/233 SM-3 (with MMX™Technology).....$2449
QP6/200 SM-3 (with Pentium Pro Processor*).....$2349
QP6/266 SM-3x (featuring Pentium II Processor).....$2699

*(includes 256KB Internal L2 Cache)

GOOD CHOICE.℠

**1.800.896.4898**

**www.quantex.com**

# No one delivers an easier network-ready solution.

## Out-of-the-box-and-onto-your-Network

We've partnered with 3Com® to bring you a combination of peak system performance and unquestionable reliability on your network. All Quantex WS systems are 3Com-certified because the network-cards are pre-installed, pre-tested and certified to work within your network environment. And Novell® and MS Windows NT® certification give you real peace of mind.

## Featuring the Pentium® II Processor

Intel's latest Pentium II Processor was engineered specifically for high-performance desktops, workstations and servers. You'll get the best performance available for 32-bit apps running on advanced operating systems. Integrated 512MB cache makes it the right choice for power workstations.

## QP5/120 WS-1

**$1249** Business lease: $ 44/Mo.

- 120MHz Pentium® Processor
- 16MB EDO Memory/512KB Pipelined Burst Cache
- 1.2GB EIDE Mode 4 HD/3.5" 1.44MB Floppy Drive
- 64-bit PCI 3D w/2MB
- 15" Digital Monitor (14.0" viewable)
- 3Com 3c509 ISA Combo NIC
- Toshiba 12X 125ms EIDE CD-ROM Drive
- Mini-Tower Case
- 104-Key Keyboard With MS PS/2 Mouse
- MS Windows '95 With MS Plus
- 3-year limited warranty, 24-hr./7-day Technical Suppor

QP5/133 WS-1.....$1279
QP5/166 WS-1.....$1349
QP5/166 WS-1.....$1399
(with MMX™ Technology)

## QP6/266 WS-4x
*(featuring Pentium® II processor)*

**$3499** Business lease: $ 113/Mo.

- 266MHz Pentium® II Processor
- 64MB EDO Memory/512KB Secondary Cache
- 4GB Ultra Wide SCSI HD / 3.5" 1.44MB Floppy Drive
- Adaptec 2940UW PCI Ultra Wide SCSI Controller
- Matrox Millennium 3D w/4MB WRAM
- 17" Digital Monitor (16.1" viewable)
- 3Com 3C905 PCI 10/100 NIC
- Toshiba 12X 115ms SCSI CD-ROM Drive
- ATX Case
- 104-Key Keyboard With MS PS/2 Mouse
- MS Windows NT 4.0 Workstation
- 3-year limited warranty, 24-hr./7-day Technical Suppor

QP5/200 WS-4.....$3049
(with MMX™ Technology)
QP6/200 WS-4.....$3149
(with Pentium Pro Processor - includes 256 Internal L2 Cache)
QP6/233 WS-4x.....$3299
(featuring the Pentium II processor)

QUANTEX
GOOD CHOICE.℠

**1.800.896.4898**
**www.quantex.com**

MMX™ intel inside pentium® PROCESSOR

© 1997 Quantex Microsystems, Inc. All Rights Reserved. 400B Pierce Street, Somerset NJ 08873. Sales Hours: M-F, 9 am - 12 am (ET) - Sat., 9 am - 6 pm. All sales are subject to Quantex's limited warranties and terms and conditions of sale. For details on our warranty or money-back guarantee call or write us. Three-year limited warranty includes first year, limited parts and labor. Second and third years, parts-only limited warranty. Other peripherals such as printers, joysticks, etc. are covered by manufacturer's warranty. *On-site service may not be available in certain remote areas and is available only if determined necessary in the sole discretion of our technicians. On-site service provided by an independent third-party provider. Software titles are subject to change and cannot be substituted. Lease payments based on 36-month term. All prices and configurations are subject to change without notice or obligation and do not include shipping or sales tax. All returned items must have a conspicuous RMA number issued by Quantex and be in original packaging. 30-day money-back policy does not include return freight or original shipping/handling charges. Quantex is not responsible for errors in typography or photography. Pentium, Pentium Pro, Pentium II, MMX, Intel and the Intel Inside logo are registered trademarks of Intel. Microsoft, and Windows are registered trademarks of Microsoft Corporation. K56flex is a trademark of Lucent Technologies and Rockwell Int'l. All other company trademarks are tradenames of each respective company.

Canada 1-800-793-4167
Puerta Rica 1-800-793-4185

12X, 16X, 18X

# THE *fastest* CD-ROM DRIVES Alive

PLEXTOR'S 12PlexX PX-12CSi SCSI drive (top), Teac's CD-512E EIDE drive (bottom).

**DVD may get all the hype, but CD-ROM drives are faster and better than ever. We tested a dozen 12X and faster drives and found two Best Buys worth a spin.**

BY ERIK HOLSINGER AND REX FARRANCE

REPORTS OF THE TRUSTY CD-ROM DRIVE'S demise have been greatly exaggerated—this year, anyway. Its sexy successor, the DVD-ROM drive, is only just beginning to appear on store shelves after being waylaid by industry fights over specifications. Eventually, DVD-ROM drives will replace CD-ROM drives. DVD-ROMs hold a lot more, and they make everything from movies to action-adventure games sound better and look better. But until then, companies continue to crank out plenty of ▶

PHOTOGRAPHS BY BIONDO PRODUCTIONS

12X, 16X, and faster CD-ROM drives.

If you want to upgrade your 4X clunker to a faster model now, one of these new CD-ROM drives may be your best choice. At about $100 to $300, they cost much less than the first DVD-ROM drive kits, and they're a lot faster at handling CD-ROM software.

As we went to press, a relative handful of DVD programs and movies were available (more should be out for the holiday buying season). The first TV set-top DVD movie players were in stores, but no finished computer DVD-ROM drives were available in time for review. Instead, we looked at a prototype DVD-ROM drive installed in a Toshiba Infinia Pentium-200 PC. The drive did a fine job of playing DVD-ROM applications (see "DVD-ROM Delivers"). And although the Toshiba drive was slow in completing our CD-ROM benchmarks, it did run CD-ROM apps without problems.

The transition to DVD-ROM won't happen overnight. Bob Katzive, vice president of Disk/Trend, a market research firm in Mountain View, California, confirms that DVD-ROM drives will take a while to catch up. "Last year over 54.5 million CD-ROM drives were sold," he notes. "It will be late 1999 or 2000 before DVD manufacturers match that volume."

For this review, we tested 12 new EIDE and SCSI-2 internal CD-ROM drives with maximum throughput ratings of 12X to 18X. The drives are priced from $105 to $269, not including SCSI cards. We did not test any new 8X or 10X models because they're already being phased out.

As expected, we found that not all the latest CD-ROM drives live up to their speed rating, and that switching to a faster drive doesn't speed up all tasks. But using CD-ROM apps, every drive tested was noticeably quicker than both the prototype DVD-ROM drive and the 4X Mitsumi CRMC FX400E EIDE drive we used for reference. Although the EIDE drives performed well—about 60 percent faster on

## Best Buys

IF YOU WANT A QUICK, well-built CD-ROM drive but don't want to spend a lot, the $149 **Teac CD-512E** should be right up your alley. This 12X EIDE model comes in an installation kit with a good instruction manual and drivers and audio CD software for DOS, Windows 3.*x*, and other operating environments that require them. If you need a drive for demanding business use, or if you are just willing to pay what it takes to get the finest, the $269 **Plextor 12PleX PX-12CSi** SCSI unit is your best bet. With Plextor's optional Adaptec AHA-2930 PCI SCSI card ($199 extra), the 12PleX PX-12CSi is the Mercedes-Benz of CD-ROM drives—eminently reliable and ultrafast. With the only two-year warranty here and a superb drive kit, the Plextor is worth every penny.

### CD-ROM DRIVES SCORECARD

| SCSI-2 INTERNAL DRIVES | Street price (5/11/97)[1] | Vendor speed rating (min./max.) | Comments | Overall value |
|---|---|---|---|---|
| Plextor 12PleX PX-12CSi<br>800/886-3935 www.plextor.com | $269[2] | 12X/12X | Superfast business product: strong caddy feed, big buffer; external model $389. | outstanding |
| Toshiba XM-3801B-S<br>714/457-0777 www.tais.com/taisdpd | $269 | 12X/15X | Top performer, but pricey for bare-bones drive with tray feed; external model $365. | very good |
| Pioneer DR-466<br>800/444-6784 www.pioneerusa.com | n/a[5] | 12X/12X | Sold by third-party vendors; this fast SCSI unit available at some computer outlets. | n/a[6] |
| **EIDE INTERNAL DRIVES** | | | | |
| Teac CD-512E<br>213/726-0303 www.teac.com | $149 | 12X/12X | Includes software for playing music CDs on DOS and Windows 3.*x* systems. | outstanding |
| Toshiba XM-5702B<br>714/457-0777 www.tais.com/taisdpd | $145 | 12X/12X | Basic drive is a fine performer for an EIDE product; priced well. | very good |
| Samsung SCR-1231<br>800/933-4110 www.sosimple.com | $135 | 12X/12X | No extras except an audio cable, but good price and performance. | very good |
| Creative Labs Infra 1800<br>800/998-5227 www.creativelabs.com | $180 | 12X/12X | Unique package has infrared remote control, attractive software bundle. | fair |
| Aztech Zeta 12X<br>800/886-8859 www.aztechca.com | $105 | 12X/12X | Outstanding price, but drive is run-of-the-mill and has mediocre performance. | fair |
| Acer CD616A<br>800/452-2337 www.acer.com/aac | $159 | 8X/18X | Disappointing performance from an 8X/18X drive; costs as much as a SCSI unit. | below average |
| Pioneer DR-444<br>800/444-6784 www.pioneerusa.com | n/a[5] | 12X/12X | Fastest EIDE drive; distributed to computer outlets through third-party vendors. | n/a[6] |
| Sony CDU-511 16X Max<br>800/352-7669 www.sony.com/storagebysony | n/a[5] | 8X/16X | You'll probably find this nimble EIDE drive installed in some new PCs. | n/a[6] |
| Wearnes CDD-1620<br>800/597-4872 www.wpinet.com.sg | n/a[5] | 12X/16X | One of the quickest EIDE drives; may be hard to find. | n/a[6] |

Best Buy  n/a = not available

Arranged by category in order of overall value based on price (20 percent), performance (50 percent), features including software (20 percent), and support (10 percent). Products distributed only through third-party vendors are arranged in alphabetical order.

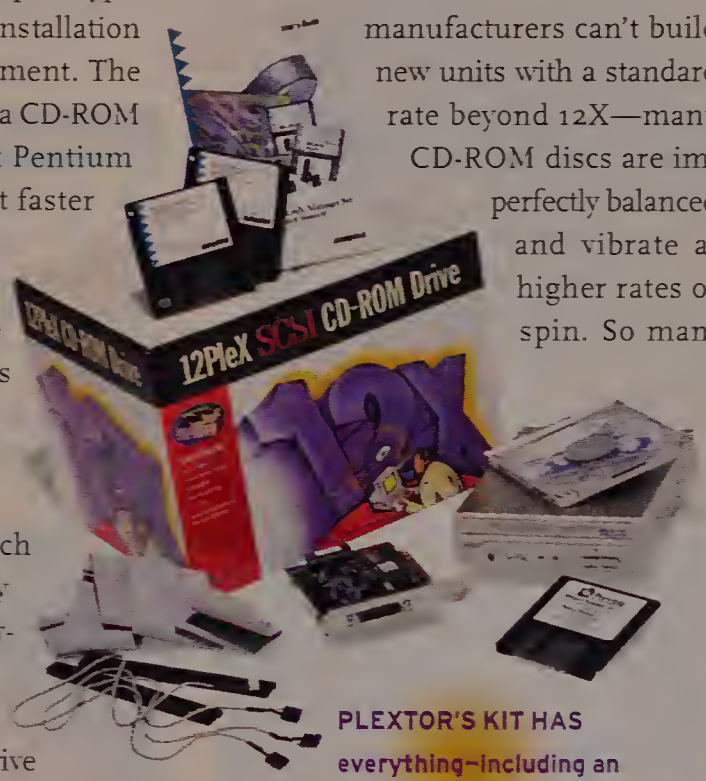
[1] Vendor estimate.
[2] Adaptec AHA-2930 interface card $199.
[3] Toll-free.
[4] Free drivers for operating environments other than Windows 95 and NT available on Web site.

average than the 4X reference drive and 50 percent faster than the DVD-ROM drive—the three SCSI drives were fastest of all. They averaged a heady 90 percent faster than the 4X Mitsumi and 80 percent faster than the DVD-ROM prototype.

File copying and software installation showed the biggest improvement. The SCSI models copied files from a CD-ROM onto our test PC, a Quantex Pentium MMX-166, up to 215 percent faster than the 4X Mitsumi did, while the EIDE drives were up to 180 percent faster. The quickest SCSI and EIDE drives installed the Office 95 suite almost 150 percent faster than the 4X (see Test Report).

If SCSI drives are so much speedier overall, then why would you even consider buying an EIDE drive? Price. An EIDE drive can save you $300 over the cost of a SCSI drive and high-performance SCSI adapter.

Our review drives include eight 12X-rated CD-ROM drives from Aztech, Creative Labs, Pioneer, Plextor, Samsung, Teac, and Toshiba. We also looked at four drives rated faster than 12X from Acer, Sony, Toshiba, and Wearnes. Drive manufacturers can't build new units with a standard rate beyond 12X—many CD-ROM discs are imperfectly balanced and vibrate at higher rates of spin. So manufacturers applied a clever solution: *hybrid* drives, which transfer data at a higher rate when reading certain parts of the disc (see "The Evolution of the CD-ROM Drive").




**PLEXTOR'S KIT HAS everything—including an optional PCI SCSI adapter.**

You can find most of the drives we tested in stores, in upgrade kits, or à la carte, depending on the manufacturer. However, we also tested four models that sometimes come in new PCs or are sold in kits by companies that buy them in quantity to package for resale under their own label or private labels. These drives include Pioneer's 12X DR-444 EIDE and DR-466 SCSI models, Sony's 8X/16X CDU-511 16X Max EIDE drive, and Wearnes's 12X/16X CDD-1620 EIDE unit. Pioneer drives are most commonly sold as Pioneer products by independent vendors such as Hi-Val or with a private label. Sony sells drives to some major system vendors such as Dell. At press time, Wearnes was seeking a new distributor.

New drives from some of the major manufacturers weren't available for review. NEC, which once offered CD-ROM ▶

| FEATURES | | | | | | | | SUPPORT | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Price rating | Performance rating | Ease of installation | Features | Support policies | Bundled application software | Average access time (ms.) | Built-in buffer (K) | Warranty (years) | Weekday support (hours) | Reader service number |
| expensive | outstanding | very good | outstanding | outstanding | Plextor Manager | 105 | 512 | 2 | 11 [3] | 601 |
| expensive | outstanding | very good | good | good | none [4] | 90 | 256 | 1 | 8 | 602 |
| n/a [6] | outstanding | very good | good | vary [7] | varies [7] | 100 | 128 | varies [7] | varies [7] | 603 |
| | | | | | | | | | | |
| inexpensive | good | outstanding | very good | good | audio CD player, drivers | 125 | 256 | 1 | 8 | 604 |
| inexpensive | good | outstanding | good | good | none [4] | 115 | 256 | 1 | 8 | 605 |
| inexpensive | good | outstanding | good | good | drivers | 150 | 256 | 1 | 24 [3,8] | 606 |
| inexpensive | good | outstanding | outstanding | very good | Microsoft Encarta, drivers | 150 | 256 | 1 | 16 [3] | 607 |
| very inexpensive | fair | very good | very good | good | drivers | 130 | 256 | 1 | 8 [3] | 608 |
| expensive | good | outstanding | very good | outstanding | drivers | 120 | 256 | 1 | 24 [3,8] | 609 |
| n/a [6] | good | very good | good | vary [7] | varies [7] | 100 | 128 | varies [7] | varies [7] | 610 |
| n/a [6] | good | very good | good | vary [7] | varies [7] | 105 | 256 | varies [7] | varies [7] | 611 |
| n/a [6] | good | very good | good | vary [7] | varies [7] | 130 | 256 | varies [7] | varies [7] | 612 |
| | | | | | | | | | | All products: 901 |

[3] Available only through third-party vendors.
[4] Can't evaluate; not sold directly by manufacturer.
[7] Software and support determined by third-party distributor.
[8] Same hours Saturday and Sunday.

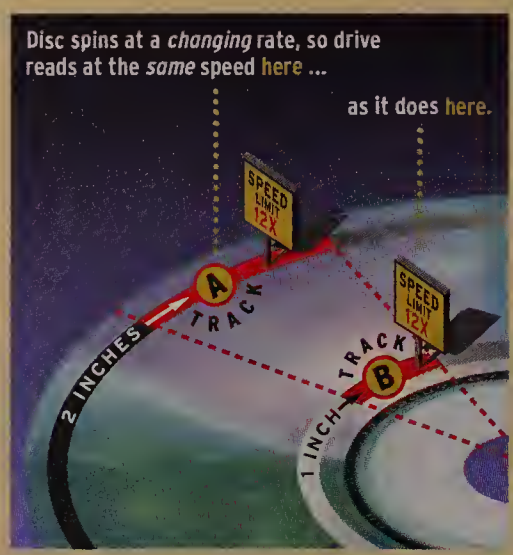
# The Evolution of the CD-ROM Drive

CD-ROM TECHNOLOGY keeps progressing, resulting in faster drives and better software. Hybrid CD-ROM drives improve on standard drives by reading parts of the CD-ROM disc faster. The first DVD-ROMs expand capacity, holding seven times as much content as a CD-ROM disc and making DVD-ROM drives a slam-dunk choice for multimedia use.

## HOW THEY WORK

### Standard CD-ROM Drives

No matter where this standard CLV (constant linear velocity) drive's head is on a disc, it reads data at the same rate: 12X (1800K per second), as shown below. Outer tracks are longer than inner tracks but hold the same amount of data per inch. So to read the same amount of data per second, the CLV drive must spin the disc slower when reading outer tracks than when reading inner tracks.




- 650MB capacity for data
- 74-minute capacity for VHS-quality video

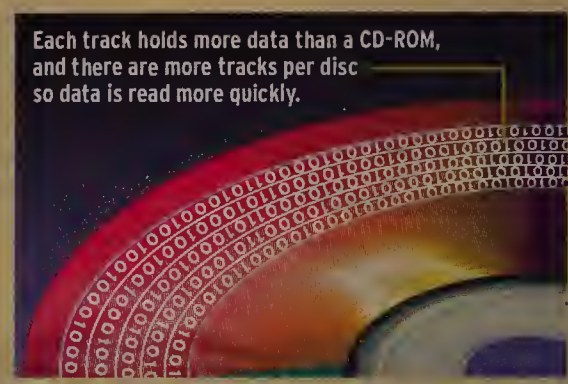
### Hybrid CD-ROM Drives

A hybrid drive can spin the disc at a constant rate as the head moves outward, or it can act as a standard CLV drive. This added ability is called *constant angular velocity.* When the head is on an outer track, data passes—and is read—faster than when the head is on an inner track. Even with a disc full of data, a 12X/24X CAV drive can read only the outer tracks—a tiny percentage of the data—at 24X.

- 74-minute capacity for digital audio
- Drives read CD-Recordable media

### New DVD-ROM Drives

DVD-ROM, designed with video in mind, dramatically increases disc capacity. Its drives use a more sophisticated read head and a tighter laser beam, and the discs hold seven times as much data. As a result, drives spinning only fast enough to yield about 4X speed with CD-ROMs read the much more tightly packed data off a DVD-ROM at about 9X. That's fast enough for great multimedia performance.




- 4.7GB capacity (first generation)
- 17GB capacity (second generation, dual-sided)
- Disc has room for 133 minutes of digital video with eight Surround Sound audio tracks, or an application requiring seven CD-ROMs
- Drive reads CD-ROMs but not CD-R media

upgrade kits, no longer sells to end users. LG Electronics (formerly Goldstar), Mitsumi, Panasonic, and Philips were all between drive revisions. Check future *New Products* for reviews as new drives appear.

### BEST BUYS: TEAC AND PLEXTOR

WE EVALUATED each drive's speed, ease of installation, features, documentation, and support and picked two Best Buys: Teac's $149 CD-512E 12X EIDE drive and Plextor's $269 12PleX PX-12CSi, a SCSI model. Consider the Teac for personal use or general office duty. The bare Teac drive we tested fresh off the production line was about 10 percent slower than the quickest EIDE models—the 8X/16X Sony and 12X/16X Wearnes. However, the Teac was still a good-performing EIDE drive, and by the time you read this it will be available in an upgrade kit. The Plextor 12PleX PX-12CSi drive is our pick when top performance is a must. Thanks to its good design and SCSI interface, it's over 15 percent quicker overall than the fastest EIDE models. It's also a good choice for situations where the drive will get a lot of handling. The Plextor's caddy feed requires you to place a disc inside a special cartridge for loading. It's less convenient than the more common motorized tray that all the others use, but it's stronger.

While they don't quite equal our Best Buys, Samsung's $135 SCR-1231 and Toshiba's $145 XM-5702B, both 12X EIDE drives, are good values. Neither comes in an installation kit, so consider them only if you're a do-it-yourselfer.

Creative Labs' $180 Infra 1800, a 12X EIDE model, is one of the most interesting drives—it comes with a programmable infrared remote. It should appeal to you if you love gadgets or want to use the remote for presentations, but you'll pay extra for the bells and whistles.

Two models were disappointing: Acer's $159 8X/18X CD616A and Aztech's $105 Zeta 12X. The Aztech has an alluring ▶

**Plextor's our choice when top performance is a must.**

MMX™ intel inside pentium® PROCESSOR

**The new high-performance HP OmniBook 5700 features:**

DMI standard solution

Multiple-operating-system support including Windows® NT

Security built into the BIOS

150 or 166 MHz Intel® Pentium® processor with MMX™ Technology

**Nothing personal here, it's strictly business.**

**Get down to business at our quick link: www.hpresource.com/omnibook-4**

el Inside logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Windows NT is a U.S. registered trademark of Microsoft Corporation. ©1997 Hewlett-Packard Company PPG445

HEWLETT® PACKARD

rock-bottom price but is the slowest drive reviewed. And the Acer hybrid did not live up to the promise of its 18X speed rating.

The $269 Toshiba XM-3801B-S, a 12X/15X hybrid SCSI drive, is very fast and well built but has a shorter warranty than the Plextor, and it comes from Toshiba only as a bare drive.

**CREATIVE LABS' Infra 1800 comes with a credit card-size remote controller.**

Pioneer's 12X DR-444 EIDE and DR-466 SCSI models performed well. If you find them packaged by Hi-Val or another vendor with a good price and warranty, both are worth considering. Sony's 8X/16X CDU-511 16X Max EIDE drive and Wearnes's 12X/16X CDD-1620 EIDE model closely matched each other's fast performance. The Sony is a worthy contender if you find it offered in a Dell system or in another vendor's new PC. We like the Wearnes drive, although it will be difficult to find until Wearnes comes up with a new distributor.

## INSTALLING OFFICE IN A MINUTE

UNLESS A NEW CD-ROM drive improves the speed of your most frequent tasks, there's not much point in upgrading. We tested the drives using a number of common CD-ROM–based chores. We ran a photo CD slide show, loaded a CD-ROM encyclopedia, copied 100 photos to our hard drive, ran a Macromedia Director animation, installed Microsoft Office 95, and performed an unindexed search in Phone Disk's Powerfinder national telephone directory. Finally, we tested full-motion video performance by measuring the frame rates of MPEG and AVI video clips played with software video players.

Although two EIDE drives—the Sony and Wearnes hybrids with a 16X top speed rating—matched SCSI drive speeds in a couple of tests, the SCSI units were faster overall. A SCSI drive will nearly always outperform an EIDE-based model if you use a high-performance adapter, such as the $240 Adaptec AHA-2940 Ultra PCI adapter we used. A fast SCSI card of this type has a processor that manages much of the data, taking a load off your PC's CPU. You can buy less expensive 8- and 16-bit SCSI adapters for about $50, but they won't perform as well. ▶

TEST REPORT

# SCSI CD-ROM Drives Are Fastest

All the new drives easily outpace the 4X reference drive—especially copying files and installing software.

| | MODELS | Drive speed min/max | Test times (◀ Faster … Slower ▶) | MPEG-1 video playback (Frames per second) | AVI video playback (Frames per second) |
|---|---|---|---|---|---|
| SCSI-2 | Toshiba XM-3801B-S | 12X/15X | | 77 | 29 |
| SCSI-2 | Plextor 12PleX PX-12CSi* | 12X/12X | | 78 | 29 |
| SCSI-2 | Pioneer DR-466 | 12X/12X | | 77 | 29 |
| EIDE | Wearnes CDD-1620 | 12X/16X | | 65 | 24 |
| EIDE | Sony CDU-511 16X Max | 8X/16X | | 65 | 24 |
| EIDE | Pioneer DR-444 | 12X/12X | | 64 | 24 |
| EIDE | Toshiba XM-5702B | 12X/12X | | 65 | 23 |
| EIDE | Samsung SCR-1231 | 12X/12X | | 65 | 24 |
| EIDE | Creative Labs Infra 1800 | 12X/12X | | 57 | 24 |
| EIDE | Acer CD616A | 8X/18X | | 64 | 25 |
| EIDE | Teac CD-512E* | 12X/12X | | 65 | 24 |
| EIDE | Aztech Zeta 12X | 12X/12X | | 64 | 24 |
| EIDE | Mitsumi CRMC FX400E[1] | 4X/4X | | 64 | 23 |

Minutes 0 5 10 15 20 25

*Best Buy [1]Reference drive

Our real-world suite of performance tests reveals a steep improvement from 4x to 12x and beyond.

Corel Pro photo CD slide show · Encarta 96 launch · File copy · Macromedia Director movie viewing · Office 95 installation · Phone Disk search

HOW WE TEST For complete methodology, see www.pcworld.com/jul97/cd-rom.

The HP 300 Series Palmtop PC
Featuring the widest screen so you can view information like you would on your desktop PC
VGA wide screen: 640 x 240 pixels
Direct print capabilities through an infrared connection
Wireless e-mail and Internet access via Type II PC Card Modem*
Fast and easy synchronization with your desktop PC
**From $499†**

**The problem with most handheld PCs is that the screen isn't wide enou**

**To get the whole picture, see our quick link: www.hpresource.com/palmtop-3**

*Optional accessory available at additional price. †Projected U.S. street price. Microsoft and Windows CE are U.S. registered trademarks of Microsoft Corporation. ©1997 Hewlett-Packard Company PPG450

HEWLETT® PACKARD

A new CD-ROM drive will bring the greatest speed boost to tasks that require heavy data throughput, such as copying files and installing software. For example, it took the 4X Mitsumi reference drive more than 10 minutes to copy 100 digital photos totaling 365MB from a CD-ROM onto our hard drive. All the new EIDE drives finished the job in under 4 minutes—a 165 percent improvement. The fastest drive—the Toshiba XM-3801B-S, a 12X/15X SCSI hybrid—did even better, copying the files in less than 3 minutes. The two 12X SCSI drives matched the 3.5-minute results of the Wearnes 16X drive, the fastest EIDE model on this test.

Software installation also showed a big speedup. All the drives installed Office 95 more than two and a half times faster than the 4X reference model, averaging 71 seconds. (Our animation played about twice as fast, too.) As in most of the other tests, the SCSI drives were generally quicker on these benchmarks.

The speed differences narrowed to about 25 percent when we ran a photo CD slide show. In this test the SCSI drives were once again fastest. A few tests showed little or no speed difference. Software loading probably won't get much faster—especially if the program stores its executables on your hard drive: The new drives loaded Microsoft's popular encyclopedia, Encarta 96, a maximum of 6 seconds faster than the 4X drive. Furthermore, the video in most education and entertainment titles is still optimized to work on older 4X or even 2X CD-ROM drives. With video clips and phone directory searches, only the SCSI drives showed a consistent if relatively small improvement over the 4X drive.

The highest speed rating doesn't always indicate the fastest drive. Big jumps—say, from 4X to 12X—usually ensure an overall speedup. But when ratings exceed 12X, performance becomes hard to predict. For instance, the model rated fastest in our group, the 8X/18X Acer EIDE drive, turned in some of the slowest times. Even drives with the same speed rating can perform differently. Aztech's Zeta 12X EIDE drive was only about 45 percent faster

## DVD: Delayed No More

**DVD-ROM DRIVES HAVE a more glamorous reason for being late to market than most tardy PC products: This time you can blame Hollywood.**

The first DVD-ROM drives were due last October. By now drives from Panasonic, Pioneer, and Toshiba should actually be out. Why the delay? The first set of specs for DVD and DVD-ROM wasn't approved by the home video industry until late fall. With Hitachi, Pioneer, and others working on DVD-Recordable drives, companies like Warner Media Services demanded the most stringent copy protection.

"Critical money comes from home video," notes Peter Black, president of Xiphias, a Los Angeles developer whose Encyclopedia Electronica was made specifically for DVD. The home video industry "was terrified that pirated DVD copies would put them out of business," says Black.

What makes DVD worth waiting for? Storage capacity, for one thing. Discs used in CD-ROM drives hold 650MB of data, 74 minutes of VHS-quality video, or 74 minutes of sound, whereas the first DVD-ROMs hold 4.7GB of data—seven times as much. Dual-layer, double-sided DVD-ROMs ultimately will *quadruple* that capacity to about 17GB. Translated into video space, that means one DVD movie disc can hold over 2 hours of superb digital video, with up to eight separate Surround Sound tracks.

As we were writing this review, the first DVD players hit the shelves. These set-top entertainment boxes work with your TV to play DVD movies and audio CDs but not DVD-ROM programs. They're pricey: $500 to $700 for the first Toshiba and Panasonic players. Only a few DVD movies were available at press time, for about $35 each.

### WHAT CAME FIRST

THE FIRST DVD-ROM drive kits—from Creative Labs and Hi-Val—were announced at the end of March. Neither was available in time for review. This summer Hitachi will start selling the first double-speed DVD-ROM drives, which the company says will speed DVD-ROM and CD-ROM applications. You'll find the Hitachi drive sold in some PCs and private-labeled in stores.

Like the DVD movie players, the first EIDE DVD-ROM drives are expensive. The complete kits, which include internal cards that handle decompression of the MPEG-2 video, cost between $500 and $1000.

Just as important, it will take a year or more before a large selection of DVD-ROM applications and movies is available.

So unless you *have* to be first on your block to own the latest technology, we suggest waiting a while. This is one time when it may pay to be late.

DESPITE THEIR TARDY arrival and high price, DVD-ROM drives like the Toshiba shown here are generating lots of excitement.

A DVD-ROM disc can hold 4.7GB, seven times as

overall than the 4X reference drive; the other 12X EIDE drives averaged about 60 percent faster than the 4X unit.

### REAL PLUG AND PLAY

CD-ROM DRIVE installations have gotten easier recently, thanks to Windows 95, EIDE CD-ROM drives, and Plug and Play SCSI adapters and drives. This time we experienced no trouble, even with the bare Pioneer, Sony, and Wearnes drives, which aren't intended for direct sale to end users. If you're installing an EIDE drive in a Windows 95 PC, the operating system will do everything but connect the cables and attach the screws. On boot-up, the operating system recognizes the drive and automatically assigns it a letter. If you're using Windows 3.1 or DOS, you'll need to install a driver. For the SCSI drives, the process is similar, although you have to install a SCSI card and software—usually a snap if you have a fairly new PC and a Plug and Play SCSI adapter.

The quality of the manuals varies. Creative Labs, Plextor, and Samsung provide plenty of detailed diagrams and instructions fit even for the most inexperienced installers. Toshiba's manuals are also relatively thick, complete, and well written, and Acer's documentation covers the basics in five languages. The barebones Teac CD-512E we tested came with the same good manual you get in the upgrade kit, which also includes sound and data cables and driver software. The poorest manual came with Aztech's kit: Of its meager six pages, only one is in English.

The vendors for all the retail drives provide technical support, but only Acer, Aztech, Plextor, and Samsung have toll-free numbers. Many vendors offer just 8 to 11 hours of tech support each weekday. Acer and Samsung stand out with round-the-clock help every day, while Creative Labs makes support available 16 hours a day, seven days a week. Most drive warranties run for one year, with the notable exception of Plextor, which provides a two-year warranty.

**CREATIVE LABS' Infra 1800 has the most control buttons. Top to bottom: Plextor, Creative Labs, Teac, Samsung.**

What you'll get with your drive depends on where you buy it. We tested the latest models, often sent as bare drives from early production. By the time you read this, the Teac CD-512E (tested as a bare drive) will come with data and sound cables, a manual, and extra drivers. Plextor's kit is the best, providing everything you're likely to need: great manuals for both drive and software, mounting rails, screws, and sound and data cables.

All the drives have a load/eject button, a headphone jack, and an audio CD volume control. Acer, Aztech, Creative Labs, Plextor, Samsung, and Wearnes add play/scan buttons for use with audio CDs.

Creative Labs' Infra 1800 has a ▶

## DVD-ROM Delivers

JUST HOW GOOD IS DVD-ROM? Based on our review of a near-production-level Toshiba EIDE DVD-ROM drive, this new format delivers every bit of the great sound and video that manufacturers have been promising.

After months of delay, Toshiba finally came through with a DVD-ROM package we could test. Since no commercial kits were available, Toshiba sent us its DVD-ROM drive preinstalled with an MPEG-2 card in a Pentium-200 multimedia PC. We examined the drive's DVD features in this system, then reinstalled the drive in our Quantex Pentium MMX-166 test PC for benchmarking. Later this year you're likely to see the DVD-ROM drives in some new Toshiba PCs, although at press time the company wasn't saying which ones. Initially, the drive will be available in retail DVD-ROM drive kits from Hi-Val and other distributors.

### VIVE LA DIFFÉRENCE

DVD-ROM DRIVES and discs look much like their CD-ROM counterparts. But taking two DVD-ROM programs for a spin in the Toshiba drive quickly dispelled the illusion of similarity. We tried two of the few DVD-ROMs available at press time: Tsunami Media's Silent Steel, a cinematic adventure game that ordinarily requires four CD-ROMs, and Creative Multimedia's Billboard Guide to Music. Both looked and sounded great, with detailed high-resolution video playing full screen.

Because of its slower spin rate, the DVD-ROM drive's speed using CD-ROM was only marginally better than our 4X reference drive's. Our two Best Buy CD-ROM drives, Teac's CD-512E EIDE unit and Plextor's 12PleX PX-12CSi SCSI, were respectively about 50 and 70 percent faster overall than the DVD-ROM drive.

The Toshiba DVD-ROM drive will be available first in Hi-Val's DVD System, which will sell for $699 with a Quadrant International Plug and Play PCI MPEG-2 card and a hefty bundle of DVD-ROM titles, including Silent Steel, Activision's Muppets Treasure Island, Origin Systems' Wing Commander 4, Xiphius's Encyclopedia Electronica, and others. Creative Labs' less expensive PC-DVD package will cost $500 and include a Panasonic DVD-ROM drive and MPEG-2 decoder, along with the DVD-ROM Warner movie sampler.

◆ **DVD System**
$699 street, Hi-Val, 714/953-3000, www.hival.com
READER SERVICE NO. 662

◆ **PC-DVD**
$500 street, Creative Labs, 800/998-5277, www.creativelabs.com
READER SERVICE NO. 663

much as a CD-ROM. Future discs will hold up to 17GB.

unique extra: an infrared remote for controlling CD-ROM slide shows, video CDs, and audio discs. If you're always within easy reach of your drive, the remote control may be more trouble than it's worth. But if you like gadgets, do a lot of presentations or want to assemble a remote-control multimedia workstation, the drive warrants a test run. The Infra 1800 also includes Microsoft Encarta.

Plextor throws in its own unique Plextor Manager, which covers the gamut of audio CD player functions and more. It recognizes and identifies any type of CD, including format and type of files. It also lets you create digital .wav files from audio discs and mix digital audio tracks.

### WHAT'S NEXT FOR CD-ROM

IF YOU'RE STILL wondering whether CD-ROM is headed for an early grave, it's worth noting that the companies developing DVD-ROM drives—industry giants like Panasonic, Philips, Pioneer, and Toshiba—are also designing and selling new CD-ROM drives as fast as they can. Within the next few months to a year, expect to see lots more hybrid drives, with top rates of 20X, 24X, and beyond. The base speed should stay around 12X, so it's doubtful you'll see spectacular leaps in performance over the fastest of the drives we've reviewed here. Some, however, will offer perks like the ability to read CD-Rewritable discs—something that no current CD-ROM drive is able to do.

DVD-ROM drives also look very promising, especially for home use, but they'll have to come down quite a bit in price and be faster with CD-ROM programs to become a practical mainstream business product. Check our monthly *Top of the News* and *New Products* sections for reviews of new CD-ROM and DVD-ROM products as they become available.

◆ **Adaptec AHA-2940 Ultra PCI adapter**
$240 street, Adaptec, 800/442-7274, www.adaptec.com/deskpcon/d_sheets/AHA2940Features.html
READER SERVICE NO. 664

*Erik Holsinger is a CD-ROM producer in San Francisco. Rex Farrance is a* PC World *senior associate editor. Testing by Ulrike Diehlmann and Michael Salayko.* ■

# CD-Rewritable Drives Record and Erase

**CD-RECORDABLE DRIVES are great for people who want to create their own CD-ROMs. For less than $600, you can pick up a drive like Hewlett-Packard's popular 6X-read/2X-write SureStore Internal CD-Writer 6020 and a ten-pack of blank CD-R discs. Not a bad price to pay for the ability to record 650MB of data or 74 minutes of your favorite music.**

But wouldn't it be nice if you could also erase the discs and use them over again? With a CD-Rewritable drive, you can. The first CD-RW drive comes in Ricoh's new $699 MediaMaster Kit, which contains a 6X-read/2X-write MP6200S tray-loading internal drive with a 1MB buffer. The kit also includes software: Adaptec's EZ CD Pro 95 and DirectCD (for writing CD-R and CD-RW discs) and Seagate's Backup Exec 95. In addition, you get one blank CD-RW disc and one blank CD-R disc, and a PE Logic SCSI-2 adapter. We looked at one of the first production models with prerelease copies of the Adaptec programs and our own Adaptec AHA-2940 Ultra card. Even though the software wasn't final, we were able to record and erase discs.

◆ **SureStore Internal CD-Writer 6020**
$599 street, Hewlett-Packard, 800/826-4111, hpcc920.external.hp.com:80/cdwriter/main.html
READER SERVICE NO. 665

◆ **MediaMaster Kit**
$699 street, Ricoh, 702/352-1600, www.ricohdms.com
READER SERVICE NO. 666

### FIRST WRITES

INSTALLATION WAS a simple matter of hooking up a SCSI CD-ROM drive; within 10 minutes we were ready to load the software. EZ CD Pro is best when you want to record a whole disc at once; DirectCD, with its drag-and-drop approach, makes it easy to copy and archive a few files or folders at a time. With each program, it took about 5 minutes to copy 100MB from our hard drive onto the discs—and less time to erase the CD-RW media. Ricoh says you can erase a disc 1000 times before wearing it out. You can save a lot of money by using CD-R discs when you don't need erasability: CD-RW discs cost $25 each, compared with about $6 per blank CD-R in quantity.

Note that the current batch of CD-ROM drives can't read the Universal Disc Format of CD-RW media. But the next generation of CD-ROM drives will be able to. Some may even be available by the time you read this—check with your vendor.

Will CD-RW doom dedicated CD-R drives? Probably not. However, you can bet that prices on CD-R drives will drop once again.

RICOH'S NEW MP6200S CD-RW drive: At last, you can write and rewrite data on a disc almost as if it were a 650MB floppy.

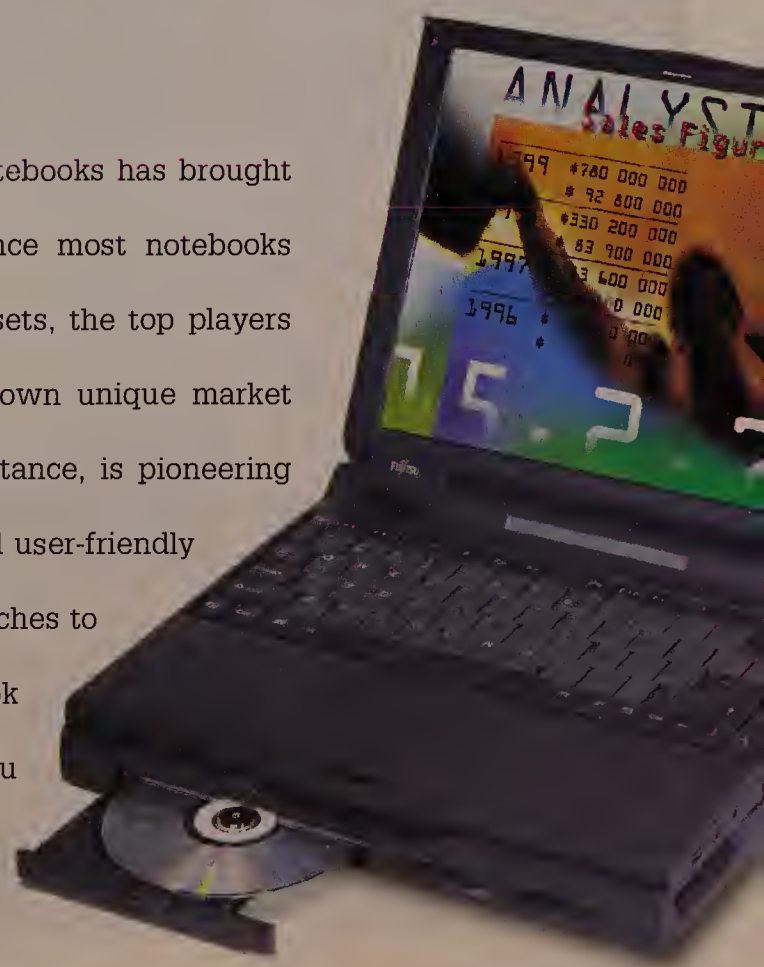
The next step is DVD-Recordable and DVD-Rewritable drives. The latter will appear under the unlikely sounding name DVD-RAM. Pioneer expects to introduce the first DVD-R drive this summer—a professional product rumored to cost over $10,000.

At about the same time, Hitachi will come out with a consumer DVD-RAM drive that will be sold under private label. Pricing was unavailable at press time but is likely to exceed $1000. Disc capacity will be about 4GB for DVD-Recordable and 2.6GB for DVD-Rewritable.

# The First Notebooks That Put People First

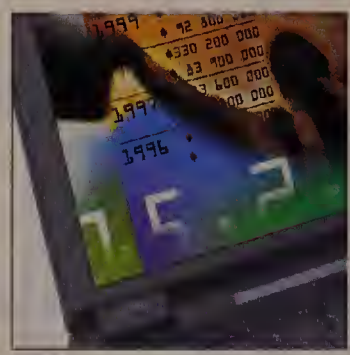
**Growing popularity spurs demand for powerful, reliable notebook computers designed with user comfort in mind.**

The skyrocketing popularity of notebooks has brought with it intense competition. Since most notebooks offer similar performance and feature sets, the top players are making moves to stake out their own unique market niches: Fujitsu PC Corporation, for instance, is pioneering the development of new ergonomic and user-friendly models by adding decidedly human touches to the latest high-performance notebook technology. The introduction of Fujitsu PC Corporation's new LifeBook™ Family of notebook computers is but the most




FUJITSU
FUJITSU PC CORPORATION

recent illustration of the firm's commitment to provide mobile computing solutions that seamlessly integrate into the user's life.



The LifeBook Family's unique "human touches" make for a user experience that is productive *and* comfortable.

## The LifeBook Family of Notebook Computers.

The strategy behind Fujitsu PC Corporation's LifeBook Family of notebooks is to blend the latest technology, superior quality, and a "Built for Humans" approach into comprehensive solutions for mobile professionals. After five years and billions of dollars of research and development, this initiative has resulted in a line of notebooks that brings a new level of flexibility, modularity, and ergonomic comfort to the industry.

Across the line, features such as an easy-to-read status indicator for on-board operating information, wide palm rests, sturdy, full-size keyboards, and top-quality, large, crisp screens make for a user experience of unprecedented ease and convenience. Additional "human-touch" features include comfortable, rounded corners, a contemporary, midnight-blue color, and multi-function bays that easily let mobile professionals custom configure their LifeBook notebooks with second batteries, hard drives, or other devices to meet their personal needs.

## Built on Advanced Core Technologies.

These and other LifeBook comfort features are overlaid upon core technologies consisting of 150MHz, 133MHz, and 120MHz Intel Pentium® processors

MMX™ intel inside pentium® PROCESSOR

# Built for Humans?

"The workplace has changed dramatically in the past few years," observes Fujitsu PC Corporation President George Everhart. "Fewer and fewer people find themselves tied to the office. They're at branch offices, at client sites, at home, or on the road." The Internet, notebooks, corporate intranets, and cell phones have been major forces in bringing about this new-look workforce. And the changing workforce has caused corporate America in large part to reinvent itself, too. Management has decentralized, and efforts to boost productivity have given rise to innovations such as flex time and telecommuting. But while new technologies have helped create a business environment that is more flexible and unfettered, they have also forced users to conform to a variety of high-tech devices.

Fujitsu PC Corporation President George Everhart.

"The notebook has changed the way we work," says Everhart. "Now it's time for the way people work to change the notebook." This is the kind of thinking that led to Fujitsu PC Corporation's revolutionary "Built for Humans" philosophy. And the reason why Fujitsu PC Corporation has committed itself to go beyond the requisite performance and functionality to develop the most comfortable notebooks in the industry. "By considering human needs, we have been able to create products for mobile professionals that combine leading-edge technology, competitive pricing, mobility, and quality with comfort, convenience, flexibility, and style," says Everhart. The result is the LifeBook Family—business solutions that are truly "Built for Humans."

with MMX™ technology (only available on select models), PCI and PC CardBus architectures, and large, high-resolution passive-matrix (DSTN) or active-matrix (TFT) screens. To get down to business fast, most LifeBook notebooks come equipped with a broad selection of preinstalled Internet and productivity software. And for advanced multimedia, LifeBook notebooks include high-speed CD-ROMs, built-in speakers with 16-bit SoundBlaster™ compatible stereo sound, MPEG-1® full-motion video support, and Zoomed video acceleration.

The LifeBook Family provides a complete set of I/O connections for enhanced flexibility with communication and connectivity devices including serial, parallel, IrDA-compatible infrared, external monitor, keyboard/mouse, external FDD, and docking ports. With a mini-docking station—complete with two additional Type II or one Type III PC Card slots and an integrated 10/100 Ethernet port—the LifeBook Family can offer all the essential features of a desktop replacement solution. A number of other options is also available.

To assure that up-to-the-minute advancements in processor, screen, communications, battery, and software technologies are continuously incorporated into the LifeBook line, Fujitsu PC Corporation has forged strong partnerships with industry leaders such as Intel and Microsoft.

Designed for Microsoft® Windows 95

## A Family with Appeal for All Types of Mobile Professionals.

With its broad range of functions, features, and options, the LifeBook Family is designed to provide solutions that meet just about any kind of mobile computing need—from the home office to the Fortune 500 corporation. Ease of use and ownership, as well as benefits that include a three-tiered service and support structure, a pre-purchase product evaluation program, PC Card slot locks for security, and built-in fax/modems for fast communications with corporate headquarters make the LifeBook Family particularly attractive to corporate customers.

## Built for Humans. But Kind to the Bottom Line, Too.

The LifeBook Family's ability to share many peripherals such as memory, batteries, CD-ROMs, and docking options provides the advantage of having a standard set of connectivity, storage, and power devices. Corporate users with a large installed base of LifeBook notebooks—entry-level models, top-of-the-line units, or a mixture—will find that the flexibility of having a common set of devices at their disposal can make for a low cost of ownership, providing significant economies over time. Additionally, Fujitsu PC Corporation's rigorous manufacturing processes and quality testing, bolstered by a $3 billion annual research and development budget, have made for products whose durability and reliability are second to none in the industry. These and other cost-saving attributes of the LifeBook Family are drawing the attention of a growing number of IT decision makers.

## Fujitsu PC Corporation in Brief.

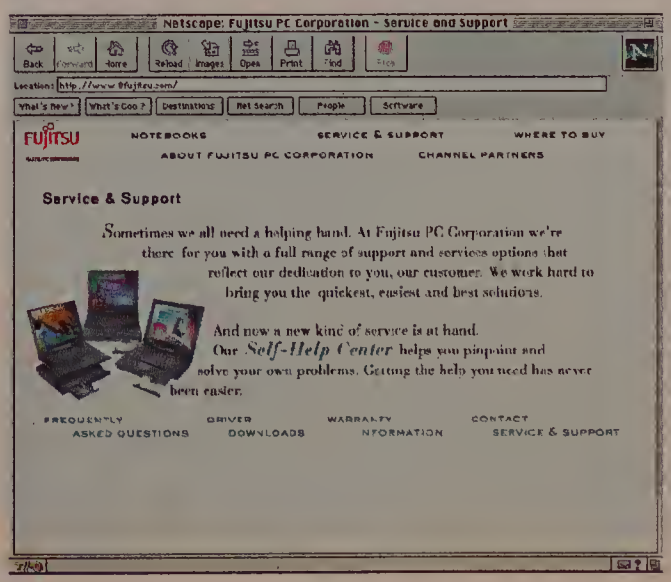
**Fujitsu PC Corporation is a wholly owned subsidiary of Fujitsu, Ltd. of Japan. It was established in 1996 in a move by Fujitsu to expand its personal computer business into the American market. The company's corporate headquarters and design center are located in the heart of the Silicon Valley in Milpitas, California. The firm also utilizes a manufacturing facility in Hillsboro, Oregon.**

**Because of its affiliation with Fujitsu Ltd., Fujitsu PC Corporation is in the enviable position of being able to leverage the financial and technical strengths of the world's second-largest computer maker* and sixth-largest notebook manufacturer.** Fujitsu Ltd., founded in 1935, is a $36 billion leading supplier of computers, communications, and microelectronics. Over the course of its 62-year history, the company has been a technology pioneer in areas as diverse as data communications, flat-panel displays, network computers, artificial intelligence, and desktop personal computers.**

* *Datamation* Global 100, *Datamation* Magazine, June 16, 1996
** International Data Corporation, March 1997

## Service and Support Also Delivered with a Human Touch.

To complement the human orientation of its product engineering, Fujitsu PC Corporation has placed customer satisfaction at




Users can conduct remote diagnostics and downloads instantly at Fujitsu PC Corporation's automated, no-waiting service web site (www.8fujitsu.com).

the center of its service and support operations. For instance, the Fujitsu PC Corporation Call Center sets a standard for the industry with an average wait time of less than two minutes for support calls, and an average warranty repair time of under four days. Even the manuals and tutorials have been written with the user in mind—novices and computing veterans alike.

LifeBook notebooks are backed by a standard three-year limited warranty†, including toll-free technical phone support (1-800-8FUJITSU), 24 hours a day, every day. Additionally, the LifeBook service and support web site is automated, allowing users to conduct remote diagnostics and download any software drivers they need—from audio to SoftPEG®. The LifeBook Family also offers Business Class and Executive Class options that can provide supplemental support, up to and including overnight repairs and shipping of exchange units. It's all part of a philosophy that puts the needs of the customer first.

## "What Mankind Can Dream, Technology Can Achieve."

It is fitting that Fujitsu PC Corporation is part of an organization with bold vision. "What mankind can dream, technology can achieve" demonstrates Fujitsu's commitment to innovation and its keen understanding of the central role technology plays in today's rapidly changing world. "By building the future into each of our products, we are giving our customers a head start into the next century," says Fujitsu PC Corporation Chairman Akio Hanada. "We see a future where data, communications, information, and entertainment will all converge, and our products are evolving in that direction," he continues. "We're not just keeping up with the advances in mobile computing. We're creating them."

# Just the Facts: The LifeBook Family.

### The 400 Series—
### The Entry-Level Solution.

The LifeBook 400 Series comes equipped with 120MHz Intel Pentium processors, a 10X CD-ROM, and advanced multimedia capabilities. Weighing 7.3 pounds and running on a NiMH battery, the 400 Series offers users a portable solution that provides up to two hours of battery life. For those who prefer, Lithium ion battery technology is available as an option. Other features include an 11.3" passive-matrix (DSTN) screen, a 1GB hard drive, 16MB of RAM (upgradable to 72MB), two Type II and one Type III PC Card slots, and a TouchPad pointing device. The LifeBook 400 Series also features a multi-function bay that allows warm swapping between the interchangeable CD-ROM drive and floppy disk drive.

The 400 Series: The ideal solution for price-conscious new users, students, or telecommuters.

### The 500 Series—
### High-Performance Flexibility.

The LifeBook 500 Series comes standard with a 133MHz Intel Pentium processor or a 150MHz Pentium processor with MMX technology, 32-bit PCI and PC CardBus architectures, 16MB of EDO RAM (expandable to 80MB), 256KB level 2 cache, 1.3GB or 2.0GB hard drives, and high-resolution 11.3" or 12.1" active-matrix (TFT) color screens, all powered by Lithium ion batteries. All

The 500 Series: Modular yet fully featured notebook solutions for mobile professionals.

† The LifeBook 400 Series comes with a one-year warranty.

LifeBook, Fujitsu, and the Fujitsu logo are trademarks of Fujitsu, Ltd. Pentium is a registered trademark and MMX is a trademark of Intel Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation. All other trademarks and registered trademarks are property of their respective companies. © 1997 Fujitsu PC Corporation. All rights reserved.

The 600 Series: Lightweight, innovative component options in a sleek design.

four models have internal 33.6 bps fax/modems, 2MB of VRAM, and modular 10X CD-ROMs. LifeBook 500 models range from 6.8 pounds with the floppy disk drive installed to slightly over seven pounds with the CD-ROM installed. A truly distinguishing feature of this versatile Series is its ability to share a broad selection of common peripherals across the line.

MMX™ intel inside pentium® PROCESSOR

## The 600 Series—
### The Ultra-Flexible, Ultra-Portable Innovator.

Powered by dual lightweight Lithium ion batteries, the LifeBook 600 Series comes standard with a 133MHz Intel Pentium processor or a 150MHz Pentium processor with MMX technology, 32-bit PCI and PC CardBus architectures, 16MB of EDO RAM (expandable to 80MB), 256KB level 2 cache, a 1.3GB hard drive, 28.8 or 33.6 bps internal fax/modems, and a high-resolution 12.1" active-matrix (TFT) color screen. The product has 2MB of VRAM and two Type II PC Card slots. The 600 Series provides all the communications and connectivity flexibility of the 400 and 500 Series, as well as a standard Enhancement Unit that quickly turns this mobile business tool into a complete multimedia system or the ideal desktop replacement. With an 8X CD-ROM, 3.5" floppy disk drive, stereo speakers, MIDI/joystick port and duplicate system ports, this unique Enhancement Unit offers professionals the choice of using their LifeBook as a full-featured, standard-weight notebook or as an ultra-lightweight powerhouse. Weighing in at just 4.4 pounds, the 600 Series is among the industry's lightest.

# Discover More about the First Notebook Computers Expressly "Built for Humans."

**With so many human touches—from design to support—built into a LifeBook notebook computer, it may be just the right touch for you or your organization. So why not find out more about what a notebook "Built for Humans" can do for you? Just visit a dealer near you, or contact Fujitsu PC Corporation for more information today.**

**To find out more about the LifeBook Family of notebook computers:**

- **Call 1·888·4·ON·THE·GO, ext. CD12**
- **Get a QuikFacts fax at 1·800·936·5209**
- **Visit www.fujitsu-pc.com**

FUJITSU

FUJITSU PC CORPORATION

Built *for* Humans.

Circle 101 on reader service card

# FIND A great pc deal ON THE web

**Great prices, no waiting, no pushy salespeople—shopping for computer products on the Web has its advantages. But the rules of buying smart still apply.**

**BY PETER SCISCO**

**Psst.** Want to know a great place to find a deal on a computer? It's got low prices, a huge inventory, and zero sales pressure. You don't have to fight traffic to get there, and best of all, the store never closes—you can shop anytime day or night. Where is this high-tech haven? On the Internet, of course.

These days, many hardware vendors, mail-order companies, and even retail outlets have set up shop on the Web. You can buy anything from a $30 cable to a $30,000 network server, all with a few clicks of the mouse.

The Web probably won't have lower prices—merchandise costs pretty much the same whether you buy it online, visit a retail store, or purchase it over the phone. But on the Web you can quickly compare prices between online shops to find the best deal; that's a lot faster than thumbing through catalogs or driving from store to store. You can also research ▶

ILLUSTRATIONS BY JOYCE HESSELBERTH

Printer
File
Print
Cancel
POWER

products, search for those that meet your criteria, compare specs among a wide range of systems, even configure your dream PC. Just try doing all that at your local Computers 'R' Us.

The downside is that the Internet can be a cold and lonely place to shop. Want to ask a question before pulling out your credit card? You'll have to call the store or send e-mail and wait for a response. You'll also want to track your order more closely than you normally would, lest it fall into a black hole in cyberspace. And if you're not careful, you could end up being fooled by a bogus Web site, buying shoddy merchandise, or getting stuck with huge restocking fees.

Where on the Web should you go to find the perfect deal? You have three choices. You can visit an online shop, many of which are offshoots of chain stores and mail-order firms such as CompUSA and Micro Warehouse. You can check out "shopping services" like Computer ESP and Price Watch, which help you find the site with the best price. Or you can dial up the sites of direct-sale PC manufacturers like Dell and Gateway 2000, configure the system you want, get a price quote, then place an order.

To uncover the truth about buying computers online, *PC World* sent me on a shopping spree. My mission: to use the Web for everything from researching and ordering products to returning the merchandise for a refund.

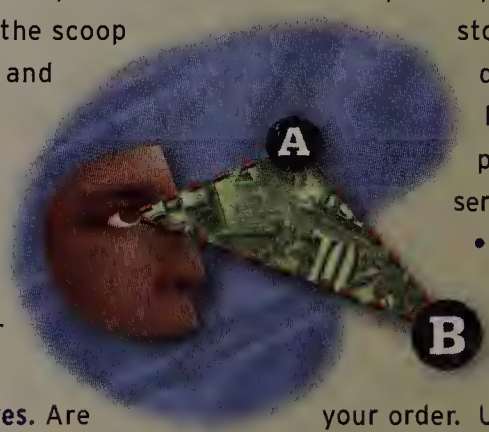
My conclusion? The Web is a great way to find the best bargain, and a convenient way to shop. But when you need customer service, you'll probably still reach for the phone.

**IS THE PAGE SECURE? Before you type your Visa number, look for a "secure page" icon in the corner of the window.**

## Smart Shopping Strategies

SHOPPING ONLINE for computer gear can be quick and painless, as long as you keep a few simple rules in mind:

- **Do your homework.** Before you buy, read online product reviews and check out Usenet groups like alt.comp.hardware and alt.computer to get the scoop from both satisfied and unhappy customers.
- **Compare costs.** Use a shopping service like Computer ESP (www.uvision.com) to find stores that offer the best deals.
- **Research the stores.** Are you dealing with a major retailer or a mom-and-pop shop? How long has it been in business? What's its reputation? Check out BizRate Guide (www.bizrate.com) and other sites that review online retailers.
- **Examine store policies.** Look for stores that offer at least a 30-day money-back guarantee and don't charge a restocking fee. Make sure there's a toll-free customer service number. And check whether technical support is available through the store as well as from the manufacturer.
- **Make contact.** Use the site's e-mail link to ask a specific question, then gauge the store's response. If you don't get a fast answer before you buy, you probably won't get good service afterward.
- **Keep track.** Some sites provide customer and order numbers so you can track the status of your order. Use them. If there's an ordering glitch, you'll want to find out about it as soon as possible.
- **Be security conscious.** Never send credit card or personal information through a site that doesn't support standard security protocols like Secure Sockets Layer. If your browser doesn't support secure links, get one that does.




### MY SHOPPING LIST

THE FIRST JOB on the agenda was to buy a power desktop—something I could use for my office. I figured I needed a Pentium MMX-200 with 32MB of RAM, more than 2GB of hard disk storage, a 28.8-kbps or faster fax-modem, a name-brand sound card, and a 17-inch monitor. This was going to set me back at least $3000, I thought, so I wanted to deal with an established vendor—I didn't want to take chances.

I also needed a home machine to share with three game-loving kids and a wife returning to college. I would seek out the best multimedia system I could get for under $2000, again from a name I could trust. Less expensive but equally important items included a Brother HL-730 laser printer, which I picked for its speed, resolution, and sub-$400 price tag; a RAM upgrade and a new modem for my second office machine; a printer cartridge for my color ink jet; and the latest edition of Norton Utilities for Windows 95.

The good news: *PC World* was footing the bill. The bad news: I couldn't keep any of the stuff. But I can dream, can't I?

### NET CREDIT: IS IT SAFE?

MY IMMEDIATE CONCERN: Was it safe to send my credit card number off into cyberspace? All the movies I'd seen about teenage computer hackers came reeling through my brain. Somewhere out there, I figured, a low-life phone phreak was trolling for my Visa number. It was enough to send me back to the cash stash under my mattress.

In reality, I had little to worry about. If you take the right precautions, typing your credit card number onto a Web form is probably safer than giving it out over the phone. Most online stores use the Secure Sockets Layer protocol to encrypt your credit card data while it's being transmitted across the Net.

Your browser should indicate whether you're at an SSL site. Netscape Navigator displays a key icon in the lower left corner of the window; if the site isn't secure, the key appears broken. Microsoft Inter-

# Mail Order via Modem

These direct-sale PC manufacturers let you configure the system of your dreams, but they don't all let you order it online.

| MANUFACTURER | System configuration tool[1] | Order via secure page | Restocking fee | Minimum shipping fee | Estimated shipping time | Ease of use | Comments | Reader service number |
|---|---|---|---|---|---|---|---|---|
| Dell www.dell.com | ● | ● | none | $100 | 7 to 10 days | outstanding | Excellent support and return policies, pretty good configuration tool. | 631 |
| Gateway 2000 www.gw2k.com | ● | ● | none | $100 | 7 to 10 days | outstanding | Excellent configuration tool but site offers no information on return policies. | 632 |
| Micron www.micronpc.com | ● | ● | none | n/a | 3 to 14 days | very good | Its configuration tool is as good as Gateway's; an all-around excellent site. | 633 |
| Polywell www.polywell.com | ● | ○ | 15 percent | none | 1 to 6 days | fair | Get a quote by e-mail, but no ordering online. | 634 |
| Quantex www.qtx.com | ● | ○ | none | $69 | 14 to 30 days | very good | Very good configuration tool and even a chat room, but you must use the phone to place your order. | 635 |
| Sys Technology www.systechnology.com | ● | ○ | up to 15 percent | n/a | 5 to 7 days | good | Good configuration tool; 2 percent credit card surcharge disguised as 2 percent discount for cash. | 636 |

● Yes ○ No n/a = not available [1] A form that shows how much a specific configuration will cost. All manufacturers: 901

net Explorer displays a padlock icon in the lower right corner if the site is secure. Also, the URL for a secure page will begin with *https:* rather than *http:*. Every site I bought from used SSL.

But SSL doesn't guarantee perfect security. Because the protocol uses relatively weak 40-bit encryption, a determined hacker could in theory break the code. (A more advanced encryption standard, Secure Electronic Transactions, is in the works but is not yet in use.) Researchers have also recently reported a flaw in the way Web sites transmit information, so that your unencrypted credit card data could get transferred to the next Web host you visit. While we wait for a real solution to this problem, there is a work-around: After you've typed your credit card number, don't click a hyperlink to another page—type the URL instead. That way, your credit info won't get sent along for the ride.

If using a credit card on the Net still makes you nervous, remember that if someone steals your credit info, you can call your bank to remove charges incurred by the thief. And you can always do your research on the Net but make the actual purchase by phone. Some stores may even let you set up an account with your number on file.

## A LOYAL CUSTOMER

**Gerald Harada** of Long Beach, California, has bought computer equipment over the wire for the last ten years. Harada, who owns and runs HRH Int'l, a U.S. Customs broker, names NECX Direct as his favorite Internet retailer. Quick response is one reason: "If I order by 3 p.m. on a business day," he explains, "I can get my order the next day because NECX has local warehouses." Harada also likes the fact that he can trace his old orders. "It's a shock sometimes to see how much you've spent over the years," he says.

But Harada doesn't send credit card information over the Web. By phoning in his card number to NECX just once, he obtained a password-protected account.

## THE DIRECT APPROACH

I HAD DECIDED to buy my office power system from a direct vendor—such as Dell, Gateway 2000, or Micron—that sells PCs directly to businesses and consumers rather than through retail outlets.

Right now only a small handful of major vendors are offering their wares on the Web (see "Mail Order via Modem," above). The best ones let you custom-build your system with a choice of name-brand components, update prices on a daily basis, and include shipping charges in the final tally. They also provide an estimated shipping date and detailed information about the company's warranty and return policies.

Remember: Never buy anything—online, on the phone, or otherwise—without reading the fine print. If a company doesn't explain how it handles returns and restocking fees, take your business down the wire to the next store.

You should also check how the store treats its customers *before* you throw money at it. Find the site's e-mail link and ask a question about the store's policies or inventory. If you don't get an ▶

## DELL DIMENSION DESKTOPS FOR BUSINESS

**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ Microsoft® Office 97 Small Business Edition ◆ MS® Windows® 95 ◆ MS Mouse (MS IntelliMouse on XPS System) ◆ 3 Year Limited Warranty† with 1 Year On-site^Δ Service **Upgrades:** ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $109. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ HP LaserJet 6Pse Printer, $799. ◆ 3-Pak of Zip 100MB Cartridges, add $39.

### *NEW* DELL DIMENSION® XPS H266
266MHz PENTIUM® II PROCESSOR

Common features listed above plus:
- 64MB EDO Memory with ECC
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron® Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Integrated Yamaha 16-Bit Sound
- Altec ACS-290 Speakers w/Subwoofer
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$3599**

Business Lease◊: $130/Mo.
Order Code #500609

### *NEW* DELL DIMENSION XPS H266
266MHz PENTIUM II PROCESSOR

Common features listed above plus:
- 32MB EDO Memory
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Integrated Yamaha 16-Bit Sound
- Altec ACS-90 Speakers
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$2999**

Business Lease: $111/Mo.
Order Code #500608

### *NEW* DELL DIMENSION XPS M233s
233MHz PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

★ *Upgrade to 64MB SDRAM, add $239.*

**$2499**

Business Lease: $92/Mo.
Order Code #500607

### DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- 16X Variable EIDE CD-ROM Drive
- AWE32 Wavetable Upgrade Card
- Altec ACS-90 Speakers

★ *Upgrade to a 4.3GB Hard Drive (9.5ms), add $60.*

★ *Upgrade to a 1000LS Monitor (15.9" v.i.s.), add $119.*

**$2199**

Business Lease: $81/Mo.
Order Code #500606

# SYSTEMS THAT BLOW YOUR MIND.

## DELL DIMENSION DESKTOPS FOR HOME

**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ 56K Capable* U.S. Robotics x2 Telephony Modem ◆ MS Home Essentials ◆ MS Windows 95 ◆ MS Mouse (MS IntelliMouse on XPS Systems) ◆ 3 Year Limited Warranty with 1 Year On-site Service
**Upgrades:** ◆ HP DeskJet 820Cse Color Printer, add $299. ◆ Iomega Zip 100MB IDE Internal Drive with One Cartridge, add $99. ◆ 3 yrs. On-site Service, add $99.

### *NEW* DELL DIMENSION XPS H266
266MHz PENTIUM II PROCESSOR

Common features listed above plus:
- 64MB EDO Memory with ECC
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron Monitor (15.9" v.i.s.)
- *NEW* Matrox Millennium II 8MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Yamaha 32 Wavetable Sound
- Altec ACS-490 Full Dolby® Surround Sound Speakers with Subwoofer
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$3899**

Order Code #500604

### *NEW* DELL DIMENSION XPS M233s
233MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-290 Speakers with Subwoofer

★ *Upgrade to 64MB SDRAM, add $239.*

**$2999**

Order Code #500603

### DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- 16X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers

★ *Upgrade to a 6.4GB Hard Drive with 512KB Cache (9.5ms), add $75.*

★ *Upgrade to Altec ACS-290 Speakers with Subwoofer, add $75.*

**$2399**

Order Code #500602

### DELL DIMENSION M166a
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 16MB SDRAM Memory
- 2.1GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s., .26dp)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive
- Sound Blaster 16 PnP Sound Card
- Altec ACS-90 Speakers

★ *Upgrade to 32MB SDRAM, add $119.*

★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*

**$1899**

Order Code #500601

**Thousands of other custom configurations**

‡Non-discountable promotional pricing. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ★Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

**GET FREE DELL NEWS, RIGHT AT YOUR DESKTOP!**
**With DirectNews, Dell's free priority email bulletin, you can get pricing, product announcements, and limited time offers emailed direct to your computer, as soon as they become available. This money and time saving bulletin is available exclusively by subscription. And it's easy to subscribe. Just email us at listserver@dell.com with the message "join ddn" And then watch your mailbox for the inside scoop on Dell's latest offers.**

**DELL DIMENSION M166a**
166MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:
- 16MB SDRAM Memory
- 2.1GB Hard Drive (12ms)
- 15LS Monitor (13.7" v.i.s.)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive

★ *Upgrade to 32MB SDRAM, add $119.*
★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*
★ *Upgrade to an 800HS Trinitron Monitor (13.7" v.i.s., .26dp), add $49.*

**$1699**

Business Lease: $63/Mo.
Order Code #500605

## DESKTOP SOFTWARE DESCRIPTIONS

**MS Office 97 Small Business Edition (SBE) includes:**
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

Plus your choice of Bookshelf or Encarta

**MS Home Essentials includes:**
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0

## *NEW* DELL POWEREDGE SERVERS

**Common features:** ◆ 512KB L2 Cache ◆ Integrated Ultra-Wide SCSI-3 Controller ◆ Intel® EtherExpress™ Pro/100 NIC ◆ Intel LANDesk® Server Manager v2.5x ◆ Dell Server Assistant CD ◆ 3 Year Limited Warranty†

**DELL® POWEREDGE® 2200 SERVER**
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 96MB ECC EDO Memory
- 4GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- MS Windows NT® Server 4.0

★ *Upgrade to a 9GB Ultra-Wide SCSI-3 Hard Drive, add $450.*
★ *Upgrade to 128MB ECC EDO Memory, add $220.*

**$4999**

Business Lease: $179/Mo.
Order Code #250072

**DELL POWEREDGE 2200 SERVER**
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory
- 2GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- 3Com OfficeConnect Hub 8/TPC

★ *Upgrade to 64MB Memory, add $239.*
★ *Upgrade to a 4GB Ultra-Wide SCSI-3 Hard Drive, add $320.*
★ *4/8GB SCSI DAT Tape Backup, add $749.*

**$3249**

Business Lease: $119/Mo.
Order Code #250070

# NOT YOUR WALLET.

## DELL LATITUDE NOTEBOOKS

**Common features:** ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts 12X Variable CD-ROM, 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with *NEW* 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

***NEW* DELL LATITUDE® LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB RAM (72MB Max.)
- 2.1GB Hard Drive
- 2nd Lithium Ion Battery
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB RAM, add $299.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *3Com LAN+ 33.6 Modem PC Card, add $349.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Leather Carrying Case, add $129.*

**$3999**‡

Business Lease: $144/Mo.
Order Code #800130

***NEW* DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 24MB RAM (72MB Max.)
- 2.1GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $199.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Leather Carrying Case, add $129.*
★ *3Com 10Base-T Network Card, add $139.*
★ *Dell Latitude LM Port Replicator, add $159.*

**$3599**‡

Business Lease: $130/Mo.
Order Code #800132

***NEW* DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Nylon Carrying Case, add $69.*

**$3299**‡

Business Lease: $122/Mo.
Order Code #800140

**DELL LATITUDE LM P133ST**
133MHz PENTIUM® PROCESSOR

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive

★ *Upgrade to 24MB RAM, add $100.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Nylon Carrying Case, add $69.*
★ *3Com 10Base-T Network Card, add $139.*

**$2799**‡

Business Lease: $104/Mo.
Order Code #800138

**available. What can we build yours to do?**

MMX™ intel inside pentium® PROCESSOR

**TO ORDER TOLL-FREE**
**800-627-1240**
**TO ORDER ONLINE**
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada, call 800-232-0978
GSA Contract #GS-35F-4076D
Keycode #03270

DELL®

answer within three business days, don't buy there.

The first site that I checked was Micron's (www.micronpc.com). It impressed me with its robust configuration tool—an online form where I could select the type of monitor, the size of hard drive, and so on. The price was reconfigured along with my choices, allowing me to mix and match components until I got a system that fit my needs and budget. Unfortunately, at the time I visited the site, Micron did not provide a secure ordering page (it does now), so I moved on.

Gateway 2000 showed a lot more savvy at its site (www.gw2k.com), with an extensive product guide, powerful configuration tools, and secure online ordering. One particularly nice touch: The configuration screen has links to product information, so you can easily get details on, say, the different monitors available. I was sorely tempted by a final price of $2269 for Gateway's MMX-based P5-200, but I passed because it came with an Ensoniq sound card rather than the Creative Labs brand I wanted.

Dell's store (www.dell.com) sports a configuration tool only two clicks from the home page. The site didn't offer as broad a choice of components—for instance, Dell had only four monitor options, compared with Gateway's seven—and Dell prices were slightly higher. Still, an option for a Creative Labs sound card and Dell's superior record in *PC World*'s Reliability and Service survey made it a good choice, so I made my purchase there.

Ordering from Dell was a piece of cake. After clicking the Buy a Dell button on the opening page, I chose one of the Dimension desktop systems listed and entered the custom configuration area, where I selected components from a

## Services for Savvy Shoppers

Looking for the best deal? These sites help you compare price and selection across multiple online stores.

| COMPANY | Number of stores | System configuration tool [1] | Order via secure page | Selection [2] | Ease of use | Comments |
|---|---|---|---|---|---|---|
| Computer Bargain Hunters www.hom.net/~browder | 115 | ○ | ○ | poor | poor | Shopping can be fun, but you'd never know it from this site's weak design. |
| Computer ESP www.uvision.com | 94 | ○ | ○ | outstanding | very good | The Yahoo-like listings, lightning-fast searches, and great prices make it a shopper's mind reader. |
| pcOrder www.pcorder.com | 8 | ● | ○ | good | poor | Intended mainly for corporate accounts, this site presents an unfriendly face to average shoppers. |

● Yes ○ No

[1] A form that shows how much a specific configuration will cost.

[2] Based on percentage of successful finds from a list of common products.

## Rating the Online Stores

The best Web outlets carry everything—from PCs and peripherals to

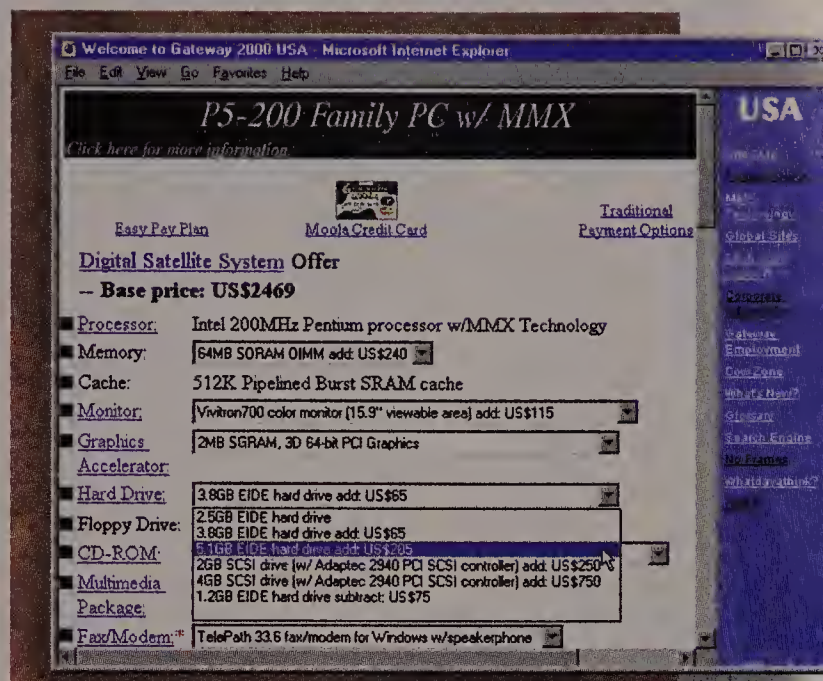
| RETAILER | Computer brands carried (as of 5/7/97) | System configuration tool [1] | Order via secure page | Money-back return policy | Restocking fee | Minimum shipping fee |
|---|---|---|---|---|---|---|
| CompUSA www.compusa.com | Acer, AST, Compaq, HP, IBM, Monorail, NEC, Packard Bell, Sony, Toshiba, ZDS | ○ | ● | 10 days hardware, 30 days software | none | n/a |
| ComputAbility www.computability.com | Compaq, HP, IBM, Sony, Toshiba | ○ | ● | 30 days | 5 percent | $7 |
| Computer Discount Warehouse www.cdw.com | AST, Compaq, HP, IBM, NEC, Sony, Toshiba | ○ | ● | 30 days | 15 percent | $2.99 |
| Cyberian Outpost www.cybout.com | Acer, AMS, AST, Canon, Hitachi, IBM, NEC, Sharp, TI, Toshiba | ○ | ● | manufacturer must approve return of nondefective items | none | none |
| CyberWarehouse www.cyberwarehouse.com | AT&T, Canon, Compaq, HP | ○ | ● | 30 days | none | none |
| Egghead www.egghead.com | AST, Sony | ○ | ● | 14 days | none | $6.25 |
| Elek-Tek www.elektek.com | Acer, AST, Compaq, HP, IBM | ○ | ● | 14 days | none | $4.99 |
| Insight www.insight.com | AST, Compaq, IBM, NEC | ○ | ● | 30 days (unopened only) | 15 percent | $10 |
| Internet Shopping Network * www.isn.com | Acer, AST, Canon, Compaq, HP, IBM, NEC | ○ | ● | 30 days | none | $4.95 |
| Micro Warehouse www.warehouse.com | AST, Compaq, HP, IBM, Monorail, NEC, Toshiba | ○ | ● | 30 days for defective items | none | $3 |
| NECX Direct www.necx.com | Acer, AST, Compaq, HP, IBM, NEC, Toshiba | ● | ● | 30 days | up to 50 percent | none |
| PC Mall www.pcmall.com | Acer, AST, Canon, Compaq, HP, IBM, NEC, Packard Bell, Sony | ○ | ● | manufacturer must approve return of nondefective items | 15 | $3 |
| PC Shopping Planet www.shoppingplanet.com | Acer, Compaq, HP, NEC, Packard Bell | ○ | ● | 30 days for defective items, 5 days for nondefectives | up to 15 percent | none |

● Yes ○ No n/a = not available * Recommended [1] A form that shows how much a specific configuration will cost. [2] Based on price comparisons for a list of common products.

series of drop-down menus. I calculated the price by clicking a single button, then clicked the Purchase button to move to a confirmation screen. After double-checking my order, I clicked Purchase to enter an SSL-secure page, where I typed in my credit card info, shipping address, and phone number. As part of the transaction, Dell gave me an order number—an easy way to track my computer's whereabouts as I waited for it to arrive at my door.

I found three other direct vendors with configuration tools—Polywell, Quantex, and Sys Technology. But none of them offered a secure page for placing my order, so I decided to pass.

Overall, buying a system directly through the Web was a far better experience than shopping by phone. I could get clear product descriptions and configure my system quickly and easily, without an aggressive salesperson panting in my ear.




CUSTOM-DESIGN your system using a configuration tool like the one on Gateway 2000's site.

## FINDING THE RIGHT STORE

BUT NOT ALL manufacturers sell their systems direct. For example, if you want to buy a PC from Hewlett-Packard, IBM, or Compaq online, you'll have to find a retail site that sells those systems—and not just any store will do. The first rule of computer shopping: Wipe the phrase *impulse buy* from your vocabulary.

You want a store with low prices, fast service, reasonable shipping and handling fees, and a willingness to take something back if you change your mind—without charging a big restocking fee. Here the Internet stands head and shoulders above the world of suburban malls, superstores, and print catalogs, thanks mainly to what I call *shopping services*—sites where you can type in the specs of what you're looking for and get both a list of products and a selection of Web-based stores that sell them.

*PC World*'s parent company, International Data Group, is preparing its own shopping service, called Web Shopper. Other services affiliated with traditional publishing companies include Ziff-Davis's NetBuyer (www.netbuyer.com) and McGraw-Hill's Maven (www.maven.com). I focused my attention on the unaffiliated services.

Computer ESP (www.uvision.com) is one of the better shopping services. Its fine selection of search and comparison tools helps you plow through more than 80,000 pieces of computer gear and accessories in over 90 Web-based stores, including CompUSA, Computer Discount Warehouse, and NECX Direct. Computer ESP's pricing information ▶

software. But check warranties and restocking fees before you whip out the plastic.

| Estimated shipping time | Prices [2] | Selection [3] | Ease of use | Comments |
|---|---|---|---|---|
| n/a | good | fair | good | Wiggly pictures and scrolling marquees sometimes just get in the way—driving to the store is faster. |
| 2 to 5 days | good | outstanding | very good | Good prices and policies make this site an enjoyable and convenient online shopping experience. |
| 2 to 5 days | good | outstanding | outstanding | Less than perfect Web-based customer service hurts otherwise very good site. |
| 1 to 5 days | good | good | very good | You'd better know exactly what you want, because they may not take it back. |
| 5 to 7 days | outstanding | poor | fair | Limited selection—you may not find what you're looking for. |
| 1 to 5 days | outstanding | poor | good | Limited availability and selection, no guarantees—the mall is more fun. |
| 1 to 5 days | good | outstanding | very good | Great selection and easy navigation make this an obvious bookmark for online shoppers. |
| 1 to 5 days | good | outstanding | outstanding | Great inventory and good prices but haphazard customer service. |
| 2 to 5 days | outstanding | outstanding | outstanding | Looks like it was built from the ground up as an Internet site; great all around. |
| 1 to 2 days | outstanding | outstanding | good | Lacks thorough technical information, but otherwise an excellent site. |
| 5 days | good | outstanding | outstanding | Great site if you can get past all the on-screen hype. |
| 1 to 5 days | good | good | very good | Whatever you buy, just make sure it has a manufacturer's money-back guarantee. |
| 1 to 5 days | good | fair | good | No-hassle returns for the do-it-yourselfer. |

[3] Based on percentage of successful finds from a list of common products.

# Surprised at your web hosting rates?!

Then call ValueWeb today, the world's most affordable web hosting service!

**$19.95/MO**

No Minimum Contract!

- Domain name registration provided (http://www.your_name.com/)
- Access to our SSL secure server
- Your own CGI-bin directory
- Anonymous Virtual FTP
- E-mail forwarding
- Your own FTP account
- T3 connection to the Internet
- 1000 Mb of data transfer per month
- Daily tape backup
- Choice of UNIX and Microsoft® Front Page
- Detailed web usage statistics
- Auto E-mail responders
- 25 Mb of disk space
- Truespeech® server support included (real time audio)
- Same day setup
- POP3 E-mail accounts

**30 Day Money Back Guarantee!**

**ValueWeb**℠

*Ask about our reseller program!*

**1-888-W9E3-H4O6S7T8-U8**

**Save $10 When You Register Online! • www.valueweb.net • E-mail: sales@valueweb.net**

Circle 260 on reader service card

new communications

new thinking

new speed

new discoveries

new ideas

new places

NEW POWER

NEW

NOW

NEWCOM™

A Subsidiary of Aura Systems, Inc.

www.newcominc.com

Simultaneous Voice/Data Fax Modems, Multimedia Kits and Speakers,
56Kbps Speakerphone Systems, and other Advanced Communications for a New World.

Circle 174 on reader service card

made it easy to pinpoint the best deal among all the stores. The site employs a Java-powered Search Agent tool that does the hunting for you. Even more interesting is the service's Price E-Alert, which notifies you by e-mail when the product you want drops below a certain price.

A quick search through Computer ESP's product list turned up 97 Pentium MMX systems at different online outlets. One button-click sorted the systems by price. Some machines looked like great bargains, but I wasn't about to buy without more research. So I cut the no-name clones and the poorly rated vendors from the list, saved the rest to a file, and kept shopping.

The Internet houses other shopping services, but few match Computer ESP's scope. Computer Bargain Hunters (www.hom.net/~browder) listed only three printer manufacturers in its database—and Brother wasn't one. pcOrder (www.pcorder.com)—a site intended more for corporate accounts than individual users—had an intimidating interface. For example, access to the site's shops is buried three pages deep under a link titled "Powered by pcOrder." It was like standing in front of a store I couldn't enter without a secret handshake.

Shopping services are great for finding the best prices, but they don't they let you gauge a store's overall quality. For that, I turned to the BizRate Guide (www.bizrate.com), which offers reviews of online retailers. BizRate covers everything from contact information to return policies. The site's one flaw is its relatively small scope: At present, it covers only a few major online stores.

## A CAREFUL SHOPPER

**Sharon Berman** doesn't consider herself naive, but she feels perfectly safe buying computer products online. She started ordering from companies she had dealt with previously over the phone—Computer Discount Warehouse and Egghead—but says she has no problem now buying from other vendors as well.

That's not to say that Berman, a machinist with General Motors in Tonawanda, New York, doesn't do her homework. "As a rule, I am not an impulse buyer," she says. She reads reviews, visits local stores before buying hardware, and downloads software demos from publishers' Web sites. And just to be absolutely safe, she uses a single credit card for all her online purchases so she can easily pinpoint any problems that arise.

### HITTING THE STORES

OKAY. I'D FIGURED OUT what system I wanted, what I could expect to pay, and the best places to start looking. It was time to hit the stores.

My first stop was NECX Direct (www.necx.com). Lurking beneath the Computer Superstore link was a well-organized online catalog. Scrolling headlines and highlighted bargains give the feel of a real-world superstore, and the low prices certainly make the site tempting. But I wasn't quite ready to whip out my credit card, so I surfed on.

I struck gold—and learned a hard lesson in Internet economics—while visiting what would become one of my favorite shopping sites, Elek-Tek (www.elektek.com). I did a quick hunt for 'MMX' using the site's search tool and hit pay dirt with an Acer Aspire 2731 Pentium MMX-166 for $1560; when I added a CTX 15-inch monitor and JBL 14-watt speakers, it brought the total system price to $1998.

I thought for sure I had found my home system, so I bookmarked the page and shopped around for other gear. That was my first mistake. When I returned a couple of days later, Elek-Tek had raised the price on the Acer to $1699—still a good buy, but adding in the peripherals put it beyond my $2000 limit.

I ended up at Insight (www.insight.com), the online retail companion to the big mail-order house. I reveled in the site's almost overwhelming selection and helpful category listings.

Insight's "configuration" screen let me specify only product category, manufacturer, and price, but by this time I'd already settled on an IBM Aptiva C33 as my new home system. When I added a 17-inch Princeton Graphics monitor, the system came in just under my $2000 limit. I clicked over to Insight's checkout page and made the purchase. This, I would later discover, was mistake number two (see "Tracking the Order"). ▶

Search Results - Microsoft Internet Explorer

File Edit View Go Favorites Help

Call Me!
ELEK-TEK Home
Power Search
Lookup Order
Shopping Cart
Information
Retail Stores
MANUFACTURER INDEX
MANUFACTURER REBATES

**Product Search Results**

The list of products that matched your query of **MMX** is shown below.

| Manufacturer | Product Name | Price | SKU | In Stock | Add to Cart |
|---|---|---|---|---|---|
| Acer | Aspire 4 2731 Pentium® 166 With MMX Technology 16MB/2.0GB | $1,599.00 | #204892 | ✓ | Add |
| Acer | ASPIRE 4 P/200MMX 32/2.0GB | $1,899.00 | #204909 | ✓ | Add |
| Books that Work | VISUAL HOME DELUXE MMX CD | $49.99 | #222472 | | Add |
| Compaq Computer Corp. | DESKPRO 6000 P166/MMX/2150/PDS | $3,179.00 | #218827 | | Add |
| Compaq Computer Corp. | DESKPRO 6000 P200MMX/32MB/4.2 | $4,049.00 | #221177 | | Add |
| Compaq Computer Corp. | PRES 4784 P/200MMX 32/4.3GB | $2,399.00 | #206492 | | Add |
| Compaq Computer Corp. | PRES 8772 P/200MMX 48/6.5GB | $2,799.00 | #206509 | | Add |

FINDING A BARGAIN MMX system couldn't be easier, thanks to online stores like Elek-Tek.

©1996 GM Corp. Buckle up, America! For a brochure call 1-800-950-2438 or visit www.chevrolet.com

I do not drive to work.
I do not drive to get from
Point A to Point B.
I do not drive
to run away
from the world.
I just love
to drive.

With its 215-hp V6, quick-ratio power steering and specially tuned suspension, the Monte Carlo® Z34® is the car you can trust to make driving something more than just a means to an end. The 1997 Monte Carlo Z34. Personal space. From Genuine Chevrolet.

Genuine Chevrolet®
*The Cars More Americans Trust.*

## PRINTERS, RAM, AND MORE

MY SHOPPING CONTINUED through several more sites. Computer Discount Warehouse (www.cdw.com) had one of the quickest and most accurate search engines. I snagged the Brother HL-730 laser printer for a very reasonable $399 and kept moving.

Micro Warehouse came next (www.warehouse.com). The site looks a lot like the paper catalog. Its lack of a configuration screen makes it less useful for system shopping, but I easily found the modem I was looking for, at a very good price.

For the small items on my list—an ink cartridge for my printer and a memory upgrade for my computer—I landed my browser on PC Shopping Planet (www.shoppingplanet.com). Because this store bills itself as an upgrade specialist, I expected (and got) good prices on consumables and RAM. I also appreciated PC Shopping Planet's "No Hassle Return" policy—the store even sends along a UPS shipping label with your order, making it easier to send products back.

For my software purchase, I went strictly by price. I went with ComputAbility (www.computability.com); its $68 tag on Norton Utilities for Windows 95 beat everybody else's, although the $7.70 I paid for shipping and handling pretty well wiped out the savings. There's a lesson here for Internet and mail-order shoppers: Because the majority of online stores charge a $3 to $10 minimum shipping fee, buying only a single low-cost item isn't worthwhile.

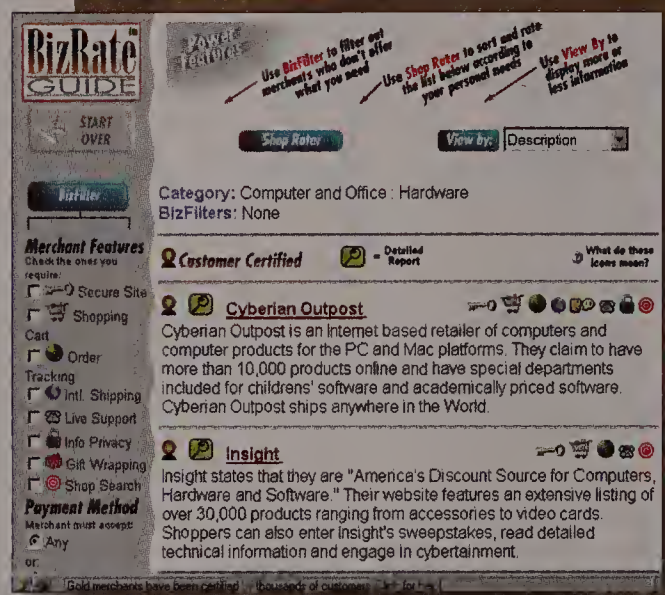
## TRACKING THE ORDER

SO FAR, MY SHOPPING SPREE hadn't hurt too much. But as the bills mounted and the packages started to arrive, flaws in a generally painless shopping experience began to emerge.

For example, the tracking system at Insight simply dropped my Aptiva order into a black hole. After three days without receiving a confirmation, I called Insight and learned that my order was held up due to a snafu with a maxed-out credit card. I could have fixed the problem with a call to my bank, but I was so irritated with Insight that I canceled the order outright.

Computer Discount Warehouse also fell short when I inadvertently ordered the same printer twice. I sent e-mail to customer service to cancel the second order but still received confirmation calls for both sales the next day. I explained the situation twice to two people, and both assured me that the second order had been canceled. Three days later, both printers showed up at my door. In the end, however, the store refunded the entire purchase amount on both printers, plus shipping charges for each. CDW also skipped the usual restocking fee—a very nice way to apologize.

Some Web stores treated me right from the get-go. Dell, for instance, e-mailed me confirmation, then called the day after I placed my order to verify my purchase. Then Dell called again to resolve another problem with a maxed-out credit card. (Hey, when you go on a $6000 shopping spree, these things happen.)




**WHO'S MINDING THE STORES?** Check BizRate Guide for the inside dope on the best (and worst) places to shop online.

## MIXED RETURNS

WHEN IT CAME TIME to return the products I'd bought, my experience was mixed. With Dell, a single phone call was all I needed to get a refund (minus shipping charges) for an entire system, and nobody tried to talk me out of it or to sell me a different model.

PC Shopping Planet socked me with a 5 percent restocking fee, but that's still better than the fees some stores charge. And I steered completely away from Cyberian Outpost (www.cybout.com) and PC Mall (www.pcmall.com); their return policies state that they accept returns only when the manufacturer guarantees money-back satisfaction.

By now I'd shopped for so long, my fingers were numb and my retinas were lumps of charcoal. But the results were worth it. No other shopping method offers a way to compare prices and specs for so much gear in such a short time.

All things considered, buying computer gear on the Web is a great way to go. Next time I need to upgrade my systems, I'll go online first—even if I have to spend my own money to do it.

*Peter Scisco has been writing about personal computers, online services, and software for more than ten years.* ■

## @ Your Service

ATTENTION, SHOPPERS: There's a new Web shopping service that should give Computer ESP, pcOrder, and the rest a run for your money. Web Shopper, which is owned by *PC World*'s parent company, International Data Group, should debut late this summer. Web Shopper will offer access to *PC World*'s Top 100, plus news and real-time price updates. A collection of searchable reviews will help you zero in on the gear you need. You'll find links to Web Shopper on PC World Online's home page (www.pcworld.com).

THEY'RE TALKING ABOUT BUILDING A BRIDGE TO THE 21ST CENTURY.

CALL US WHEN YOU GET HERE.

MICRON ELECTRONICS™

800•249•1176

www.micronpc.com

# AWARD-WINNING TECHNOLOGY, SERVICE AND SUPPORT ARE ONLY A PHONE CALL AWAY.

MMX™ intel inside pentium® PROCESSOR

Talk about outstanding performance for the price and one name is sure to dominate the conversation. Micron. That's because our company offers so many desktop, PC server and portable options, expressly designed to meet your computing demands. At home. At the office. Or on the road. You see, we don't compromise when it comes to technology. Our engineers are driven by a commitment to performance and reliability. And every Micron™ system is custom configured at one of the industry's most advanced manufacturing facilities built to reflect our tradition of excellence and commitment to quality.

We also stand firmly behind every product we make. A stance that benefits from the strong relationships we share with computing innovators such as Intel, Microsoft and Novell. It means responsive service, 24 hours a day. And it means your purchase is backed by an industry-leading 5-year/3-year limited warranty.* In short, Micron is a company that holds your complete satisfaction above all else. Join us. We've not only built a bridge to the 21st century. We've crossed it. For directions on how to get here, call us today.

* The Micron TransPort VLX comes with a 5-year/1-year limited warranty.

MICRON ELECTRONICS™

800•249•1176

www.micronpc.com

# A COMMITMENT TO EXCELLENCE.

In a world where big-name performance, reliability and service are slipping, our customers and industry experts have voted to honor Micron with over 100 awards. And that's just in the past two years.

You see, we're committed to delivering computers that perform better and run trouble-free longer than any other. And if support is ever needed, we're there to make things right for you, anytime of the day or night. Finally, your Micron PC comes backed by our industry-leading Micron Power℠ warranty. It all makes for very strong computers. And very satisfied customers. You have our word on that. Call today.

## EXCELLENCE IS A CLICK AWAY.

Click on www.micronpc.com for easy access to the most up-to-date and detailed information about our award-winning PCs. Take advantage of special Web site-exclusive features. And fast technical support. Visit today to find a Micron system built with your needs in mind.

# UNCOMPROMISING TECHNOLOGY.

Performance rules with Micron. Only the hottest, most current technology goes into the system that's right for you. No compromises. With Micron, you get optimal performance for the price. Period.

## THE MILLENNIA™ MME.

The Millennia MME rockets desktop performance to a whole new world of computing power with an Intel 200MHz Pentium® processor with MMX™ technology, Intel's TX chip set and SDRAM. Speed and productivity are enhanced as never before. No compromises here. This remarkable machine also puts on an awesome display of multimedia power with a 3D video adapter, MPEG and wavetable sound. Want more good news? The Millennia MME is designed to make upgrades a snap. So what starts out as a superior PC can stay that way.

## PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY. EXPANDING THE WORLD OF MULTIMEDIA.

All the great things the Intel Pentium processor does for performance, the Pentium processor with MMX technology does better. Modem operations. 2D and 3D graphics. Video. Audio. The Internet. Memory. Video conferencing and whiteboard collaboration. MMX technology gives the entire system a boost in performance like never before.

# YOUR MICRON™ PC. MAKE THE MOST OF IT.

Only the latest technology goes into the Micron system that's right for you. No compromises. You get optimal performance for the price. Period.

## MICRON HOME MPC™

Award-winning Pentium® processor-based technology, an outstanding selection of software and competitive pricing make this a welcome addition to any family.

### STANDARD FEATURES

512KB pipeline burst cache, flash BIOS
3.5" floppy drive
100MB Iomega Zip drive
32 voice wavetable stereo sound with speakers
Advent AV270 2x25 watt stereo speakers in P200 only
33.6 fax/modem, speakerphone, voice mail
Microsoft® Phone telephony software
Internet ready: SPRYNET Internet trial membership, Microsoft Internet Explorer™
America Online and CompuServe trial memberships
PCI 64-bit 3D video, MPEG, 2MB EDO RAM
Tool-free minitower or desktop
Microsoft Mouse, 104-key keyboard
Microsoft Windows® 95 and MS® Plus! CD
Microsoft Works CD
SystemSoft SystemWizard application for automated problem resolution
Quicken Financial Pak: Quicken Deluxe, Quicken Financial Planner, Quicken Parents' Guide to Money, Quicken Family Lawyer
Family Pak: ABCs by Dr. Seuss, Thinkin' Things Collection 1, Earthworm Jim and Mechwarrior 2
Microsoft Home Pak
5-year/3-year Micron Power℠ limited warranty

### HOME MPC P166

Intel 166MHz Pentium processor
16MB EDO RAM
2.1GB EIDE hard drive
12X EIDE CD-ROM drive
15" Micron 15FGx, .28dp (13.7" display)

**$1,599**

With Intel 200MHz Pentium processor with MMX™ technology — add $300
With Intel 166MHz Pentium processor with MMX — add $100

### HOME MPC P200

Intel 200MHz Pentium processor
32MB EDO RAM
3.1GB EIDE hard drive
16X EIDE variable speed CD-ROM drive
17" Micron 17FGx, .26dp (15.8" display)

**$2,249**

With Intel 200MHz Pentium processor with MMX — add $100
With Intel 166MHz Pentium processor with MMX — subtract $100

## MICRON POWERDIGM™

This new Intel-based workstation punches through the most daunting 32-bit applications.

### STANDARD FEATURES

256KB internal L2 cache, flash BIOS
12X SCSI CD-ROM drive
3.5" floppy drive
PCI 32-bit Ultra Wide SCSI-3 controller
Iomega Jaz SCSI drive with 1GB removable cartridge
32 voice wavetable stereo sound with speakers
Number Nine Imagine 128 series II video card, 4MB VRAM
3Com® 3C905 Fast EtherLinkXL 10/100 PCI TPO network adapter
Tool-free minitower
Microsoft Intellimouse, 104-key keyboard
Microsoft Windows NT® Workstation
5-year/3-year Micron Power℠ limited warranty

### MICRON POWERDIGM XLI

Dual Intel 200MHz Pentium Pro processors
64MB ECC EDO RAM
4GB Ultra Wide SCSI-3 hard drive
19" Hitachi SuperScan CM751, .26dp color monitor (18" display)

**$5,499**

Bus. lease $173/mo.

## OPTIONS

### MULTIMEDIA OPTIONS

| | |
|---|---|
| 32 voice wavetable stereo sound card | $59 [1] |
| 32 voice wavetable stereo sound card with 2MB RAM | $99 [1] |
| Advent AV270 Powered Partners stereo speakers | $79 |
| Advent AV370 Powered Partners stereo speakers with subwoofer | $199 |
| Microsoft SideWinder™ 3D Pro joystick | $59 |
| Microsoft SideWinder gamepad | $39 |

### STORAGE/MEDIA OPTIONS

| | |
|---|---|
| Adaptec 2940U Ultra SCSI Fast-20 controller (upgrade from system with standard Ultra SCSI Fast-20 controller) | $100 |
| Plextor 12PleX 12X 1.8MBps SCSI internal CD-ROM drive (upgrade from systems with standard 12X EIOE CO-ROM drive) | $200 [2] |
| Iomega Jaz SCSI drive with 1GB removable cartridge | $399 [2] |
| Iomega ZIP IDE drive with 100MB removable cartridge | $99 |
| Iomega 6-pack of 100MB Zip cartridges | $99 |
| Iomega Ditto 2000 (1/2GB) Travan tape backup drive with tape | $149 |
| Iomega Ditto 3200 (1.6/3.2GB) Travan tape backup drive with tape | $199 |
| Sony 4/8GB SCSI DDS-2 tape backup drive with tape | $749 [2] |
| Seagate Backup Exec | $249 |
| Mylex dual channel Ultra SCSI-3 RAID caching controller with 4MB RAM | $899 |

### NETWORKING OPTIONS

| | |
|---|---|
| 3Com 3C509B EtherLink III ISA combo network adapter | $79 |
| 3Com 3C900 EtherLinkXL PCI combo network adapter | $99 |
| 3Com 3C905 Fast EtherLinkXL 10/100 PCI TPO network adapter | $99 |
| 3Com OfficeConnect Hub 8/TPC | $149 |
| 3Com OfficeConnect Switch 140 | $969 |

### COMMUNICATION OPTIONS

| | |
|---|---|
| 33.6 internal data/fax modem | $139 [3] |
| 33.6 internal data/fax modem, speakerphone, voice mail | $159 [4] |
| 33.6 external data/fax modem | $299 |

### HP PRINTERS

| | |
|---|---|
| HP DeskJet 692c printer | $329 |
| HP LaserJet 5L-FS printer | $419 |
| HP DeskJet 870 Cxi printer | $509 |
| HP LaserJet 6P printer | $799 |

Price includes cable. Additional OeskJet/LaserJet models available. Please call for details.

### SOFTWARE OPTIONS

| | |
|---|---|
| EdVenture Pak: Sheila Rae the Brave, Putt-Putt Saves the Zoo, Reader Rabbit's Reading Development Library 1, Freddi Fish and the Case of the Missing Kelp Seeds, and the Thinkin' Things Collection 2 (available only on desktop and notebook systems with Microsoft Windows 95 and CO-ROM) | $69 |
| Quicken Financial Pak: Quicken Deluxe, Quicken Financial Planner, Quicken Parents' Guide to Money, Quicken Family Lawyer (available only on desktop and notebook systems with Microsoft Windows 95 and CO-ROM) | $69 |

### DISPLAY/VIDEO OPTIONS

| | |
|---|---|
| 17" Hitachi SuperScan 1711 (15.9" display) .26dp color monitor | $150 [5] |
| 21" Hitachi SuperScan CM801 (20" display) .26dp color monitor | $650 [5] |
| Number Nine Imagine 128 series II video card, 4MB VRAM | $299 [6] |
| Number Nine Imagine 128 series II video card, 8MB VRAM | $549 [6] |

### EXTENDED DESKTOP SERVICE OPTIONS

Optional 1st year on-site service[7] coverage included

| | |
|---|---|
| 2nd year on-site service[8] coverage (with system purchase) | $79 |
| 2nd year on-site service[8] coverage (after system shipment) | $99 |
| 2nd and 3rd year on-site service[8] coverage (with system purchase) | $99 |
| 2nd and 3rd year on-site service[8] coverage (after system shipment) | $139 |

### DIGITAL CAMERAS

| | |
|---|---|
| Kodak Digital Science DC20 camera | $199 |
| Kodak Digital Science DC25 camera | $499 |
| Kodak Digital Science DC50 zoom camera | $699 |

### OTHER OPTIONS

| | |
|---|---|
| APC Per7T surge suppressor | $39 |
| APC Pro7T surge suppressor | $59 |
| APC Smart-UPS 700 with PowerChute plus software | $389 |
| APC Smart-UPS 1000 with PowerChute plus software | $529 |
| Microsoft Natural Keyboard® (upgrade from standard keyboard) | $49 |

[1] Upgrade from systems with standard 16-bit stereo sound card
[2] Requires SCSI host adapter
[3] Modem includes trial memberships to CompuServe and America Online
[4] Modem includes trial memberships to CompuServe and America Online, requires sound card
[5] Upgrade from systems with standard Micron 17" 17FGx color monitor
[6] Upgrade from systems with standard 64-bit 2MB video card
[7] 1st year on-site service is available in the United States and in limited areas in Canada from third-party service provider per customer's agreement with provider
[8] 2nd year and 2nd and 3rd year offerings are available in the United States only

Some options and accessories available with system purchase only

# PERFORMANCE RULES WITH MICRON.™

## MICRON MILLENNIA™

The Millennia family offers you an enlightening combination of performance and features to suit any budget.

### MICRON MILLENNIA MME P200

#### STANDARD FEATURES

512KB pipeline burst cache, flash BIOS
16X EIDE variable speed CD-ROM drive
3.5" floppy drive
100MB Iomega Zip drive
32 voice wavetable stereo sound with speakers
56Kbps technology modem*
PCI 64-bit 3D video, MPEG, 4MB EDO RAM
Tool-free minitower or desktop
Microsoft® Intellimouse, 104-key keyboard
Microsoft Windows® 95 and MS® Plus! CD
Microsoft Office 97 SBE CDs
Multimedia Xcitement Pak
(comprised of MMX technology-based software)
2 USB connectors
5-year/3-year Micron Power℠ limited warranty

Intel 200MHz Pentium® processor with MMX™ technology
16MB SDRAM
2.1GB EIDE hard drive
15" Micron 15FGx, .28dp (13.7" display)
**$1,959**
Bus. lease $67/mo.

Intel 200MHz Pentium processor with MMX
32MB SDRAM
3.1GB EIDE hard drive
17" Micron 17FGx, .26dp (15.8" display)
**$2,399**
Bus. lease $82/mo.

Intel 200MHz Pentium processor with MMX
64MB SDRAM
4GB EIDE hard drive
17" Micron 17FGx, .26dp (15.8" display)
**$2,659**
Bus. lease $91/mo.

### MICRON MILLENNIA MME P200 PLUS

#### STANDARD FEATURES

512KB pipeline burst cache, flash BIOS
PCI 32-bit Ultra SCSI Fast-20 controller
12X SCSI CD-ROM drive
3.5" floppy drive
100MB Iomega Zip drive
32 voice wavetable stereo sound with speakers
56Kbps technology modem*
PCI 64-bit 3D video, MPEG, 4MB EDO RAM
Tool-free minitower or desktop
Microsoft Intellimouse, 104-key keyboard
Microsoft Windows 95 and MS Plus! CD
Microsoft Office 97 SBE CDs
Multimedia Xcitement Pak
(comprised of MMX technology-based software)
2 USB connectors
5-year/3-year Micron Power℠ limited warranty

Intel 200MHz Pentium processor with MMX
32MB SDRAM
4GB SCSI hard drive
17" Micron 17FGx, .26dp (15.8" display)
**$3,159**
Bus. lease $108/mo.

### MICRON MILLENNIA PRO2 200

#### STANDARD FEATURES

Supports dual Intel 200MHz Pentium Pro processors
256KB internal L2 cache, flash BIOS
16X EIDE variable speed CD-ROM drive
3.5" floppy drive
100MB Iomega Zip drive
16-bit stereo sound and speakers
PCI 64-bit 3D video, MPEG, 4MB EDO RAM
Tool-free minitower or desktop
Microsoft Intellimouse, 104-key keyboard
Microsoft Windows 95 and MS Plus! CD
Microsoft Office 97 SBE CDs
5-year/3-year Micron Power℠ limited warranty

Intel 200MHz Pentium Pro processor
32MB EDO RAM
3.1GB EIDE hard drive
56Kbps technology modem*
15" Micron 15FGx, .28dp (13.7" display)
**$2,299**
Bus. lease $78/mo.

Intel 200MHz Pentium Pro processor
64MB EDO RAM
4GB EIDE hard drive
17" Micron 17FGx, .26dp (15.8" display)
**$2,799**
Bus. lease $96/mo.

Intel 200MHz Pentium Pro processor
64MB EDO RAM
4GB SCSI hard drive
12X SCSI CD-ROM drive
PCI 32-bit Ultra SCSI Fast-20 controller
17" Micron 17FGx, .26dp (15.8" display)
**$3,499**
Bus. lease $119/mo.

*Maximum transmission speed of up to 56Kbps when downloading data and 33.6Kbps when uploading. However, actual performance is dependent upon numerous factors and observed transfer rates may be less than the maximum potentials.

MMX™ intel inside pentium® PROCESSOR

intel inside PENTIUM® PRO PROCESSOR

intel inside pentium® PROCESSOR

# ASSURANCE DOWN THE ROAD.

Micron is a company driven by performance and reliability. Our commitment to building better engineered computers shows. In the past two years, we've collected over 100 awards for product performance, customer service and reliability.

Source: *PC World* best overall PC company for reliability and service, December 1996.

### THE MICRON POWER WARRANTY

If we didn't believe so strongly in the quality of our products, we wouldn't back them with such an outstanding warranty. The Micron Power warranty provides coverage with 5-year protection on microprocessors and main memory where most other companies give you three. Our industry-leading warranty offers a 30-day money-back policy. Plus 24-hour technical support.

**MICRON POWER℠ WARRANTY**

5-year limited warranty on microprocessor and main memory
3-year limited parts-only system warranty (1-year for TransPort VLX)
1-, 2- or 3-year optional on-site service agreement for Micron desktop and server systems
30 days of free Micron-supplied software support for Micron desktop systems; 3 optional network operating system incident resolutions included for Micron server systems
30-day money back policy
24-hour technical support

The foregoing is subject to and qualified by Micron's standard limited warranties and terms and conditions of sale. Terms and conditions of sale may vary for specific configurations. Copies of the limited warranties may be obtained on our Web site or by calling Micron.

Designed for Microsoft® Windows® 95

PC WORLD RELIABILITY & SERVICE
DECEMBER 1996
BEST OVERALL COMPANY

PC MAGAZINE EDITORS' CHOICE
FEBRUARY 1997
MICRON MILLENNIA MXE P200

# CALL NOW FOR DETAILED PRICING AND OPTIONS

Micron Sales Hours: Mon-Fri 6am-10pm, Sat 7am-5pm (MT) • Technical Support Available 24 Hours A Day-7 Days A Week
Tollfree from Mexico: 95-800-708-1755 • Tollfree from Canada: 800-708-1758 • Tollfree from Puerto Rico: 800-708-1756
International Sales: 208-893-8970 • International Fax: 208-893-7393

©1997 Micron Electronics, Inc. All rights reserved. Micron Electronics is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice; prices do not include shipping and handling and any applicable taxes. 30-day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All sales are subject to Micron Electronics' current terms and conditions of sale. Lease prices based on 36-month lease. The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, Windows, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation. All other service marks, trademarks and registered trademarks are the property of their respective companies.

MICRON ELECTRONICS™

**800•249•1176**

www.micronpc.com

By Dan Littman and Eric Hellweg



# 33.6 and getting faster

HIDDEN INSIDE your computer is the device that connects you to the world: your modem. If you use it often, we're willing to bet that your biggest complaint is about speed. Now you're thinking about upgrading, and all you hear is the buzz around the new 56-kbps modems. Should you run out and buy one?

56-kbps technology is a classic case of buyer beware. There are some critical facts you need to know before you buy. First, 56k modems are different from conventional modems in that they can run at top speed only when downloading from a compatible server. When uploading or communicating with another modem—56-kbps or otherwise—they can go no faster than 33.6 kbps.

Second, the technology is tied up in a standards war that may take a year or more to settle. Currently two protocols are available: ▶

**Sure, new 56-kbps modems** are hitting the highway, but they may not take you everywhere you want to go. Your best bet for cruising the Net is still a 33.6k modem. We review ten and pick two reliable models **ready to drive off the lot.**

PHOTOGRAPHS BY GEOFF SPEAR

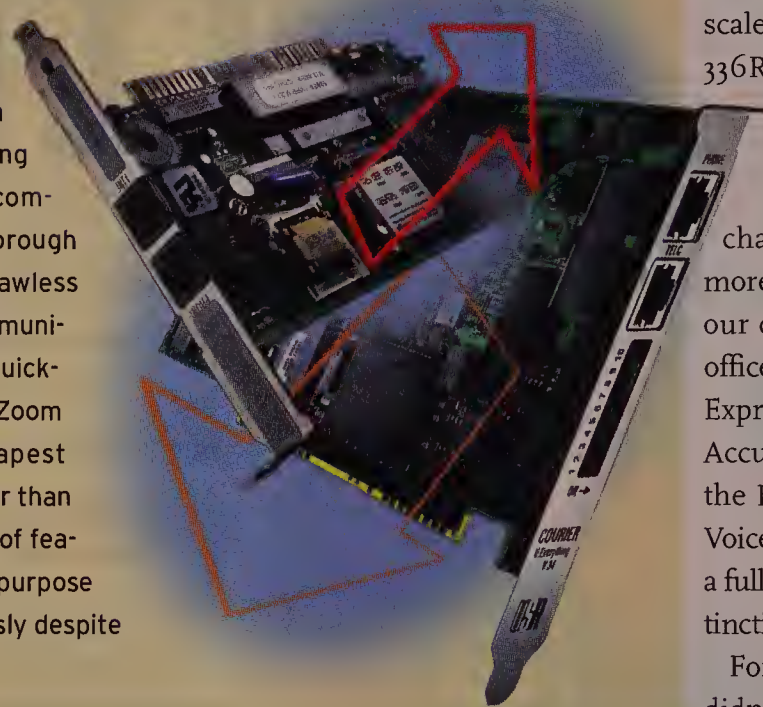
K56flex, proffered by Rockwell/Lucent, and U.S. Robotics' x2. You need to know which flavor your Internet service provider supports before you choose a 56-kbps modem. The phone line itself could be a problem. Some may not be able to handle a 56-kbps connection. If at all possible, try before you buy.

Vendors' difficulties with getting 56-kbps out the door were surprising. We originally intended this story to be a roundup of both 56-kbps and 33.6-kbps modems. But by the time we were knee-deep in testing, none of the promised internal 56k products had shown up. The early K56flex modems got off to a false start due to problems with the Rockwell chip set. And at that time, even U.S. Robotics did not have an internal x2 modem ready. Developments were slow at the server end of the 56k line as well. Other than at U.S. Robotics headquarters, we couldn't find any 56k servers to dial in to. It was only as we were wrapping up testing for this story that ISPs with 56k came online and we started to receive a variety of 56k products. We ran some informal tests of these latecomers over live phone lines, and they were significantly faster at downloading—about 43 percent overall—than 33.6-kbps modems (see "56k Versus 33.6: A Leap Ahead"). By the time you read this, a bunch of new K56flex and x2 modems should be hitting store shelves, and ISP support is growing. Look for a roundup of 56k modems in an upcoming issue.

BEST BUYS

## USR, Zoom at the Top

THE $215 U.S. ROBOTICS Courier V.Everything offers toll-free tech support and a well-rounded list of extras, including FlashROM and distinctive ring. It compensates for its high price with thorough and accessible documentation, a flawless installation, and one of the best communications software packages around, QuickLink II. Our other Best Buy, the $89 Zoom FaxModem V.341 Plus, is the cheapest modem on the chart. It's a little faster than the USR but doesn't have its range of features. The Zoom is a great general-purpose budget modem and installed flawlessly despite its non-Plug and Play status.




### 33.6 IS STILL THE SAFE BET

FOR MOST PEOPLE who want to upgrade immediately, the safest bet is an analog 33.6-kbps modem. They work just like your old 14.4-kbps modem, only much faster. Plenty of models are available. For this review, we tested 14 internal modems from Amquest, Boca Research, Diamond, E-Tech, Hayes, IBM, Practical Peripherals, Shark, U.S. Robotics, Wisecom, and Zoom, ranging in price from $89 to $249.

We awarded Best Buys to the U.S. Robotics Courier V.Everything and the Zoom FaxModem V.341 Plus because they represent the best combination of speed, price, and features. The Courier lacks voice capabilities but comes with one of the best software packages around, QuickLink II. It's also FlashROM upgradable. The Zoom's features are very basic, but it tied for second fastest performance and was dirt cheap—less than $90. Both U.S. Robotics and Zoom back their modems with great support packages. USR offers toll-free support, while Zoom provides a lengthy seven-year warranty. Both companies will ship you a new unit if yours stops working—reassuring if your modem serves as the lifeline for your business.

The Hayes Optima 336B Internal Business Modem is the fastest performer on the chart and has a nice sampling of features, but at $249 it's expensive. At the other end of the price scale, the Shark Multimedia Baby Tiger 336R and Wisecom Accelerator IV 33600 Voice Internal are cheap, but their support policies could be better.

The other modems on the Top 10 chart (see page 257) are suitable for more specific needs. Three modems on our chart fit the bill for small or home offices: the Diamond Multimedia Supra-Express 336i Sp with ASVD, the Hayes Accura 336 Total Gaming Solution, and the Practical Peripherals Practical 336 Voice/Data/Fax. All three have voice mail, a full-duplex speakerphone, Caller ID, distinctive ring, and cross-ship replacement.

For reviews of the four modems that didn't make this month's Top 10 chart, and a discussion of software modems, check out *PC World*'s Web site at www.pcworld.com/t10modems.

### PERFORMANCE: A CLOSE RACE

WE DIDN'T FIND any earthshaking differences in performance among our Top 10 modems, but if you plan to transfer lots of big files, there are some clear choices. The fastest, the Hayes Optima, was about 19 percent faster than the slowest, the Practical Peripherals Practical 336 Voice/Data/Fax. That's a difference of about 30 seconds per megabyte of data. See the Test Report for the performance results of all the Top 10 modems.

A note about the Test Report: We list an "effective transfer rate" along with the time to transfer a megabyte of data. All the modems connect at up to 33.6 kbps, but they also compress files before sending them over the wire. One reason we use different types of files is the range of compressibility they represent. If a 33.6-kbps modem can compress a file to half the original size, for instance, it can transfer twice the amount of data in the same time—or at 67.2 kbps, its effective transfer rate.

### PLUG AND PLAY, NOT; FEATURES, YEP

DON'T RELY ON Plug and Play certification from Microsoft when looking for an easy installation. Eight of the 14 modems we tested were Plug and Play certified. Instead of encountering eight no-brainer installations and six hair-pullers, we entered into a kind of topsy-turvy Plug and Play wonderland where Plug and

Play sometimes worked and sometimes didn't. For example, Boca Research's 33.6 Game/Business Modem and Wisecom's Accelerator IV, both Plug and Play certified, earned poor ratings for ease of installation. On the other hand, three of the non–Plug and Play modems—the Amquest 33600 HyperModem Voice, the Zoom, and the Shark—were simple to set up.

While the average price of a modem dropped from $173 to $139 over the last six months, they now come with many more features. Here's what to look for.

**DSVD or ASVD.** Digital or analog simultaneous voice and data lets you transfer data at the same time you speak over the phone line. A networked gamer's dream.

**VoiceView.** This lets you switch between voice and data in the same call. It's useful for support calls and telecommuting.

**FlashROM.** This lets you upgrade your modem through a software download, usually containing new features or bug fixes.

**Voice mail.** If you run a business, a modem-based voice-mail system is more flexible than your typical answering machine.

**Full-duplex speakerphone.** With this feature, you don't need to wait for the other person to stop talking before you begin.

**Caller ID.** Using this service with support from your phone company means that when a call comes in, the caller's number will show on your screen.

**Distinctive ring.** This service requires support from your local phone company. When a call comes in, the modem determines what type it is—a fax, a data transfer, or a regular voice call—and routes it to the appropriate location.

So which modem is right for you? The final decision comes down to what you'll use the modem for most. Telecommuting? Go for speed. Small business? Go for features. Just need a modem to get e-mail from friends and family? Look for the budget boards. Web browsing? Wait for our 56k reviews. ▶

## 56k Versus 33.6
### A Leap Ahead

JUST AS WE finished this roundup, two K56flex modems arrived on our doorstep. The Diamond Multimedia SupraExpress 56k and the Motorola ModemSurfr 56k are the first models we've received that support the Rockwell/Lucent 56-kbps protocol. At about the same time, MaxTech sent us its NetPacer Pro 56k, the first non–U.S. Robotics modem we've received that supports the competing x2 protocol. We already had the U.S. Robotics Sportster Faxmodem 56K and the Courier V.Everything 56k.

With modems representing both 56-kbps protocols and a bunch of 33.6-kbps modems in-house, we naturally turned to the $64,000 question: Just how much faster are the 56-kbps modems at downloading files than your average 33.6-kbps modem? Based on our tests, calling over live phone lines (currently the only way to test 56-kbps), the answer is, about 43 percent faster. The four 56-kbps modems downloaded our test files in an average of 3 minutes and 17 seconds per megabyte. (We didn't include the Motorola in our final test results because of problems with the modem's early drivers.) A typical 33.6-kbps modem (a USR Sportster Faxmodem 33.6) took 4 minutes and 40 seconds to download the same files. That's a big savings in time—and in phone charges too, if you're on an hourly billing plan.

Per megabyte, the bigger and less compressible the file, the faster the download. The 56k units were 46 percent faster at transferring our 839K .tif file and 916K .zip file. The 611K .doc file, which is more compressible, showed the smallest gain—about 29 percent.

None of these numbers should be taken as the last word in 56-kbps performance. The tests were run over live phone lines, which are usually slower, and the results are not repeatable as in closed testing.

We tested the 33.6-kbps and the x2-based modems by dialing in to a server at U.S. Robotics headquarters in Skokie, Illinois. For the K56flex-based modems, we called Epoch, an ISP in Irvine, California.

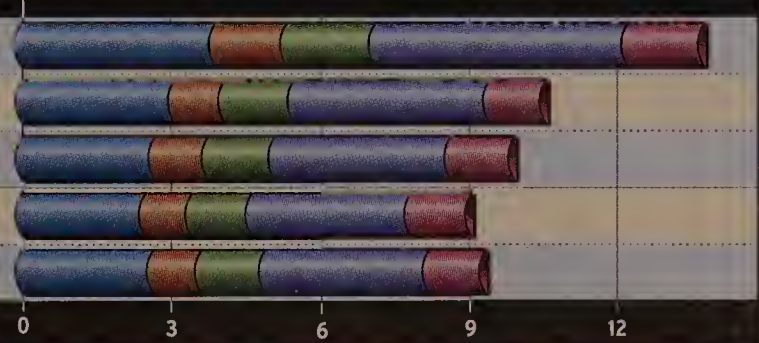
Keep in mind that we made long-distance calls for these 56-kbps tests; you may see better performance when you use a local number.

—*Eric Hellweg*

> Over live lines, the 56-kbps modems were about 43 percent faster than a 33.6-kbps modem downloading our test files.

### 56K TEARS THROUGH DOWNLOADS OVER LIVE LINES

| MODEM | 56-kbps protocol supported | Effective transfer rate (kbps)[1] | Transfer time per MB (min:sec) |
|---|---|---|---|
| U.S. Robotics Sportster Faxmodem 33.6 | n/a | 36.6 | 4:40 |
| MaxTech NetPacer Pro 56k | x2 | 47.8 | 3:34 |
| U.S. Robotics Sportster Faxmodem 56K | x2 | 51.1 | 3:21 |
| U.S. Robotics Courier V.Everything 56k | x2 | 55.9 | 3:03 |
| Diamond SupraExpress 56k | K56flex | 54.1 | 3:09 |




839K .tif · 257K .jpg · 451K .exe · 916K .zip · 611K .doc

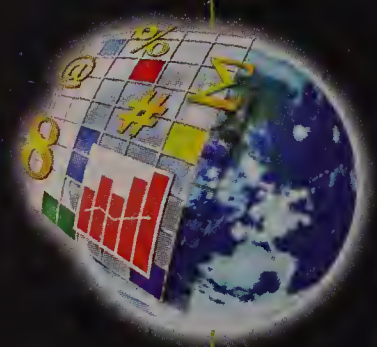
[1] With compression. n/a = not applicable

HOW WE TEST We ran our tests six times on a Gateway 2000 Pentium MMX-200 PC with a Hayes ESP serial card set to a 230-kbps data rate. We dialed in to the Internet on a PPP connection and used Procomm Plus's FTP client to transfer files. Final results are an average of the six runs.

# Introducing:

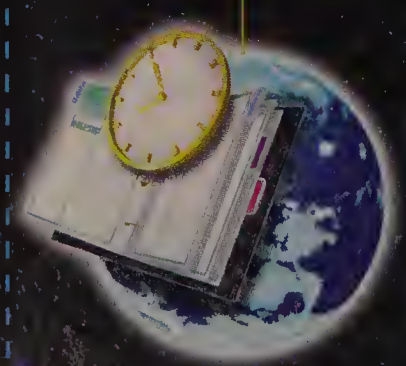
# Corel® WordPerfect® Suite 8

FULLY



INTEGRATED

APPLICATIONS



Intel MMX™ DESIGNED FOR

## COREL WordPerfect 8

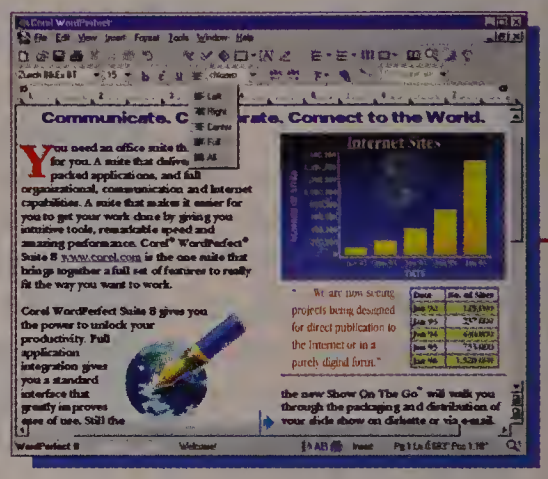
***New* Improved Shadow Cursor** – point and click, and begin typing anywhere on the page

***New* Drawing Layer** – draw objects directly on top of text and grouped graphics, and add color gradient fills or patterns

***New* Corel® Versions®** – keeps track of document revisions for workgroup collaboration

***New* Internet Publishing Capabilities** – edit or create your document in Corel® WordPerfect® and publish it to HTML with support for embedded Java™ applets

**Compatibility** – file format is consistent with previous versions, ensuring compatibility with existing documents




## COREL Quattro® Pro 8

***New* Easier-to-Use Tools** – create charts and formulas faster than ever before

***New* Cell Reference Checker™** – ensures accuracy by checking and fixing formulas that refer to other cells

***New* QuickCell™** – drag a cell to the Application Bar to see its updated value as you change other cells in the spreadsheet

***New* Cell Enhancements** – control the look of your spreadsheets with new layout capabilities

***New* WYSIWYG Page View** – work with your pages as they will appear when they are printed

## COREL Presentations™ 8

***New* Show It!™** – publishes your presentations to the Web with full support of animation, sound, graphics and video

***New* Support for MMX™ Technology** – accelerates slide transitions and drawing on computers with Intel Pentium® processors

***New* Custom Audiences™** – tailor your slide show to different audiences without saving multiple versions; there is no limit to the number of Custom Audiences you can create

***New* Show On The Go™** – bundle your slide show to distribute to users who may not have Corel® Presentations™

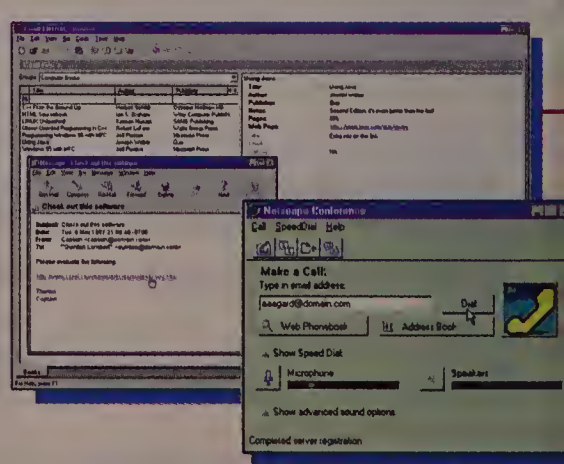
## COREL CENTRAL™ 8

***New* Conferencing** – share information and have real-time voice conversations using your Internet connection

***New* Mailbox** – send and receive e-mail messages using open Internet standards

***New* Calendaring and Scheduling** – organize and keep track of your schedule and tasks, and create and track personal and assigned workgroup tasks

***New* Address Book** – store all your contact numbers and addresses in one place and access these files throughout the suite



# 'he *New* Leader in Office Suites

et it done. Quickly. Effectively. With style. Corel® WordPerfect® Suite 8 speeds you through your workday with results that close s, impress bosses and get *you* noticed. Let advanced and organizational tools, seamless integration and foremost Web features in the office suite market rpen your edge. Let your software work for you. Corel rdPerfect Suite 8—innovation you can count on.

Vindows® 95
Vindows NT® 4.0

129.99*
grade CD-ROM version
After $20 mail-in rebate

COREL WordPerfect Suite 8
Communicate. Collaborate. Connect to the World.

## erall Suite Enhancements:

**e of Use** – The new PerfectExpert™ provides help when you need niform menus across core applications give you consistent access eatures and tools.

**ductivity** – A streamlined interface with the new context-sensitive perty Bar and the Application Bar allows for increased productivity.

**ed** – Rapid start-up, file open and screen redraw boast a new level esponsiveness.

**egration** – Superior integration among the suite's core applications ures optimum efficiency.

**ernet Publishing** – Each core application writes HTML documents can link to the Web. Plus, with innovative Java technology, you can ate layout-rich Web pages.

Whether you're **communicating** over the Internet or with a simple letter, with words, numbers or graphics, Corel WordPerfect 8 supports the medium that will drive your message home.

**Collaborate** easily with coworkers across the hall or associates on the other side of the world with the effective **collaboration** features in Corel WordPerfect Suite 8.

Experience technology that lets you go beyond traditional HTML layout limitations with the power of Java. Thrive in a competitive environment with the dynamic Web features of Corel WordPerfect Suite 8—and **connect to the world.**

BEST BUY

COMPUTER City SUPERCENTER
1-800-THE-CITY
1-800-843-2489

COMPUSA THE COMPUTER SUPERSTORE
1-800-COMPUSA

EGGHEAD Computer Software & Hardware
1-800-EGGHEAD

MICRO CENTER

Office DEPOT Office Products at Warehouse Prices!
1-800-557-3376

OfficeMax Taking Your Savings To The Max!
1-800-788-8080

STAPLES The Office Superstore
1-800-333-3330

pgrade version only. US$ plus applicable taxes and shipping and handling. Dealer may sell for less. Prices may vary from store to store.

ht © 1997 Corel Corporation. All rights reserved. Corel, WordPerfect, Quattro, Presentations, Show On The Go, Show It!, CorelCENTRAL, QuickCell, erence Checker, Custom Audiences, PerfectExpert and the Corel balloon logo are trademarks or registered trademarks of Corel Corporation or Corel tion Limited. Microsoft and Windows are registered trademarks of Microsoft Corporation. MMX, the MMX logo and Pentium are trademarks or ed trademarks of Intel Corporation. Netscape Navigator and Netscape Communicator are trademarks or registered trademarks of Netscape nications Corporation. Java is a trademark of Sun Microsystems, Inc. All other product, font and company names and logos are trademarks or ed trademarks of their respective companies.

COREL $3,000,000 WORLD CONTEST

To find out how to enter visit our Web site at: www.corel.com/contests

COREL
www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080
Document # 1383

KUR-0405-US

Circle 78 on reader service card

## U.S. Robotics Courier V.Everything

1

**PRO:** Excellent documentation, toll-free tech support

**CON:** Expensive

USR'S COURIER V.EVERYTHING has something for everyone. Everyone, that is, who's not put off by its $215 price—the second highest on our Top 10 Modems chart. It earns a Best Buy because it's easy to install, has great documentation, and with FlashROM is a cinch to upgrade.

The Courier V.Everything allows for easy COM port changes with these DIP switches, easily accessible from the outside of your computer.

The Courier comes with most of the features a small business would look for. You get distinctive ring and Caller ID (both of which must be supported by your phone company), password protection, and automatic reconnect—a convenient feature if you step away from your desk and the connection dies. Missing are the voice-mail options that a small business or home office user might want.

The software bundled with our Courier is also better than most: QuickLink II, a very nice fax and data software package; and Stampede's Remote Office Gold, a remote control application for telecommuters. USR's modem is the only one on our chart that doesn't use a Rockwell chip set, instead going it alone with chips from Texas Instruments. The V.Everything is one of only three modems with FlashROM.

The Courier's Plug and Play installation was quick and easy. If you're using Windows 3.*x* or another non–Plug and Play operating system, the modem has a dandy feature—its DIP switches are placed on the board's mounting bracket, so you can change the setting from outside the computer.

In our line quality test, using the TAS phone line simulator, the Courier was about 15 percent slower than the Hayes Optima, the fastest modem on the chart. The results of our file type test were a mixed bag: The Courier was the second slowest shipping our word processing file across the lines, but was very fast moving our tough-to-compress .zip file.

Modems are notorious for their bad documentation, but the Courier V.Everything comes with some of the most thorough and accessible documentation we've seen for beginners and corporate support staff alike. USR offers a five-year warranty (about average for modem vendors) and tech support 10 hours per weekday (also about average). Not typical is USR's toll-free telephone support; only it and Wisecom offer this. *U.S. Robotics, 800/342-5877, www.usr.com*

READER SERVICE NO. 613

## Zoom FaxModem V.34I Plus

2

**PRO:** Fast, seven-year warranty, very inexpensive

**CON:** No security features such as Caller ID or password protection

ZOOM'S $89 V.34I PLUS is a bit short on features compared to the USR Courier, but it costs less than half as much and is faster—in fact, it ties with the Shark as the second fastest modem here. Add easy installation and a nice collection of software, and this is a fine general-purpose unit suitable for anyone who doesn't need a lot of bells and whistles and the price tag that comes with them.

What's missing? The Zoom lacks high-end features such as

### INTERNAL MODEMS SCORECARD

| | MODELS | Street price (3/15/97) | Ease of installation | Performance | Documentation | Software bundle |
|---|---|---|---|---|---|---|
| 1 | U.S. Robotics Courier V.Everything* | $215 | outstanding | average | outstanding | outstanding |
| 2 | Zoom FaxModem V.34I Plus* | $89 | outstanding | above average | outstanding | good |
| 3 | Hayes Optima 336B Internal Business Modem | $249 | outstanding | above average | satisfactory | good |
| 4 | Diamond Multimedia SupraExpress 336i Sp with ASVD | $130 | outstanding | average | good | very good |
| 5 | Shark Multimedia Baby Tiger 336R | $95 | outstanding | above average | satisfactory | very good |
| 6 | Wisecom Accelerator IV 33600 Voice Internal | $99 | poor | above average | satisfactory | good |
| 7 | Practical Peripherals Practical Internet Kit | $99 | satisfactory | below average | poor | outstanding |
| 8 | Hayes Accura 336 Total Gaming Solution | $179 | outstanding | below average | satisfactory | outstanding |
| 9 | Boca Research 33.6 Game/Business Modem | $120 | poor | below average | good | outstanding |
| 10 | Practical Peripherals Practical 336 Voice/Data/Fax | $119 | good | below average | satisfactory | outstanding |

*Best Buy

[1] Digital or analog simultaneous voice and data. [2] Saturdays only. See Top 10 chart, page 257.

FlashROM and security functions like password protection and Caller ID. Nor does it have any of the handy SOHO features such as voice mail and speakerphone. It does, however, support distinctive ring and comes with Delrina's WinFax Lite and Comit—good packages if you send a lot of faxes from your modem. (Unfortunately, the WinFax manual we received was an abridged version, and the Comit program had no printed documentation at all.)

Though the modem is not Plug and Play, it installed flawlessly. We inserted the modem, booted the system, and stepped through Windows' Add New Hardware Wizard with no hitches.

Tested over a range of phone lines, the V.34I Plus's speed was very close to that of the USR Courier. The Zoom also handled graphics, .zip, and mixed files like the Courier did. But it shot word processing and .exe files across considerably faster than the number one USR.

The manual doesn't cover the installation instructions very thoroughly, but it does cover the basics, and there's a lengthy troubleshooting section as well as a comprehensive technical information section. Zoom's warranty is the third longest on our chart, at seven years. The company will also cross-ship replace your modem and offers technical support 14.5 hours a day during the week and 8 hours on Saturdays—extensive compared to other companies' policies. The only downside is that the phone call is not toll-free. *Zoom, 800/631-3116, www.zoomtel.com*

READER SERVICE NO. 614

## Hayes Optima 336B Internal Business Modem

3

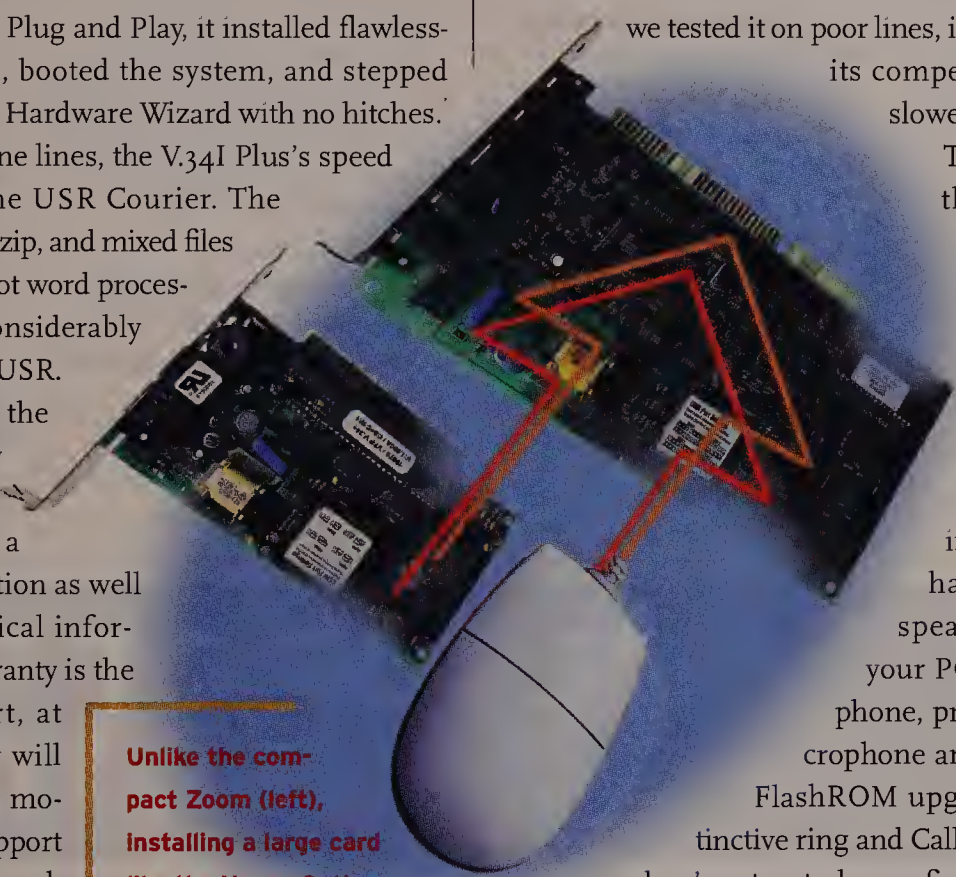
**PRO:** Fastest modem on chart, supports voice mail

**CON:** Most expensive on chart, large

THE OPTIMA 336B appears at number three despite the fact that at $249, it costs almost three times as much as the Zoom FaxModem V.34I Plus, the least expensive product on our chart. Simply put, the Optima is the fastest modem we looked at. It smoked on clean phone lines, and when we tested it on poor lines, it was less likely than most of its competitors to throttle back to a slower speed.

The Optima, Hayes's top-of-the-line analog modem, is aimed at the business market. It doesn't include any games, but comes with Hayes's own SmartCom Message Center LE data/fax/voice software, a good package. The metal mounting bracket of the ISA card has both microphone and speaker jacks, so you can use your PC as a telephone—or a Net phone, providing you supply the microphone and speakers. The Optima is FlashROM upgradable, and supports distinctive ring and Caller ID. It also allows the modem's setup to be configured remotely—that is, via another modem. It's a cool feature if you need to change some modem settings while on the road, like a password, for example.

The Plug and Play installation was flawless. The only potential installation problem is the card's size: At 8.5 inches long, it could get in the way of cables or other ISA cards in your PC. ▶



**Unlike the compact Zoom (left), installing a large card like the Hayes Optima (right) could be a problem.**

| FEATURES | | | | | | | | | SUPPORT | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fax/data software | Plug and Play | ISA card type/length (inches) | Chip set | VoiceView/ SVD [1] | FlashROM upgrade | Voice mail/ full-duplex speakerphone | Caller ID | Distinctive ring | Warranty (years) | Weekday support (hours) | Toll-free/ weekend support |
| QuickLink II | ● | 8-bit/6 | TI | ○/○ | ● | ○/○ | ● | ● | 5 | 10 | ●/○ |
| Comit, WinFax Lite | ○ | 8-bit/5 | Rockwell | ○/○ | ○ | ○/○ | ○ | ● | 7 | 14.5 | ○/● [2] |
| SmartCom Message Center LE | ● | 16-bit/8.5 | Rockwell | ○/○ | ● | ●/○ | ● | ● | 5 | 10 | ○/○ |
| Comit, FaxTalk | ● | 16-bit/6 | Rockwell | ○/● | ● | ●/● | ● | ● | 5 | 14 | ○/● [2] |
| FaxWorks Voice | ○ | 16-bit/8 | Rockwell | ○/● | ○ | ●/● | ● | ● | 3 | 10 | ○/○ |
| SuperVoice | ● | 16-bit/6 | Rockwell | ●/● | ○ | ●/● | ● | ● | 5 | 8 | ●/○ |
| QuickLink II | ○ | 16-bit/6 | Rockwell | ○/○ | ○ | ○/○ | ○ | ○ | lifetime | 10 | ○/● |
| SmartCom Message Center LE | ● | 16-bit/8 | Rockwell | ●/● | ○ | ●/● | ● | ● | 5 | 10 | ○/○ |
| QuickLink Message Center | ● | 16-bit/6 | Rockwell | ○/● | ○ | ●/● | ● | ○ | 5 | 10.5 | ○/○ |
| Practica Message Center LE | ● | 16-bit/6 | Rockwell | ○/○ | ○ | ●/● | ● | ● | lifetime | 10 | ○/● |

● Yes ○ No

## DELL DIMENSION DESKTOPS FOR BUSINESS

**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ Microsoft® Office 97 Small Business Edition ◆ MS® Windows® 95 ◆ MS Mouse (MS IntelliMouse on XPS System) ◆ 3 Year Limited Warranty† with 1 Year On-site[Δ] Service **Upgrades:** ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $109. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ HP LaserJet 6Pse Printer, $799. ◆ 3-Pak of Zip 100MB Cartridges, add $39.

### *NEW* DELL DIMENSION® XPS H266
266MHz PENTIUM® II PROCESSOR

Common features listed above plus:
- 64MB EDO Memory with ECC
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron® Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Integrated Yamaha 16-Bit Sound
- Altec ACS-290 Speakers w/Subwoofer
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$3599**

Business Lease[◊]: $130/Mo.
Order Code #500609

### *NEW* DELL DIMENSION XPS H266
266MHz PENTIUM II PROCESSOR

Common features listed above plus:
- 32MB EDO Memory
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Integrated Yamaha 16-Bit Sound
- Altec ACS-90 Speakers
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$2999**

Business Lease: $111/Mo.
Order Code #500608

### *NEW* DELL DIMENSION XPS M233s
233MHz PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

★ *Upgrade to 64MB SDRAM, add $239.*

**$2499**

Business Lease: $92/Mo.
Order Code #500607

### DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- 16X Variable EIDE CD-ROM Drive
- AWE32 Wavetable Upgrade Card
- Altec ACS-90 Speakers

★ *Upgrade to a 4.3GB Hard Drive (9.5ms), add $60.*

★ *Upgrade to a 1000LS Monitor (15.9" v.i.s.), add $119.*

**$2199**

Business Lease: $81/Mo.
Order Code #500606

# THE TOP OF THE LIN
# CLOSER TO YOUR

## DELL DIMENSION DESKTOPS FOR HOME

**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ 56K Capable* U.S. Robotics x2 Telephony Modem ◆ MS Home Essentials ◆ MS Windows 95 ◆ MS Mouse (MS IntelliMouse on XPS Systems) ◆ 3 Year Limited Warranty with 1 Year On-site Service
**Upgrades:** ◆ HP DeskJet 820Cse Color Printer, add $299. ◆ Iomega Zip 100MB IDE Internal Drive with One Cartridge, add $99. ◆ 3 yrs. On-site Service, add $99.

### *NEW* DELL DIMENSION XPS H266
266MHz PENTIUM II PROCESSOR

Common features listed above plus:
- 64MB EDO Memory with ECC
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron Monitor (15.9" v.i.s.)
- *NEW* Matrox Millennium II 8MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Yamaha 32 Wavetable Sound
- Altec ACS-490 Full Dolby® Surround Sound Speakers with Subwoofer
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$3899**

Order Code #500604

### *NEW* DELL DIMENSION XPS M233s
233MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-290 Speakers with Subwoofer

★ *Upgrade to 64MB SDRAM, add $239.*

**$2999**

Order Code #500603

### DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- 16X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers

★ *Upgrade to a 6.4GB Hard Drive with 512KB Cache (9.5ms), add $75.*

★ *Upgrade to Altec ACS-290 Speakers with Subwoofer, add $75.*

**$2399**

Order Code #500602

### DELL DIMENSION M166a
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 16MB SDRAM Memory
- 2.1GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s., .26dp)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive
- Sound Blaster 16 PnP Sound Card
- Altec ACS-90 Speakers

★ *Upgrade to 32MB SDRAM, add $119.*

★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*

**$1899**

Order Code #500601

**Thousands of other custom configurations**

‡Non-discountable promotional pricing. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. x2 products are capable of 56Kbps downlaods. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. *Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

**GET FREE DELL NEWS, RIGHT AT YOUR DESKTOP!**
**With DirectNews, Dell's free priority email bulletin, you can get pricing, product announcements, and limited time offers emailed direct to your computer, as soon as they become available. This money and time saving bulletin is available exclusively by subscription. And it's easy to subscribe. Just email us at listserver@dell.com with the message "join ddn" And then watch your mailbox for the inside scoop on Dell's latest offers.**

**DELL DIMENSION M166a**
166MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:
- 16MB SDRAM Memory
- 2.1GB Hard Drive (12ms)
- 15LS Monitor (13.7" v.i.s.)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive

★ *Upgrade to 32MB SDRAM, add $119.*
★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*
★ *Upgrade to an 800HS Trinitron Monitor (13.7" v.i.s., .26dp), add $49.*

**$1699**
Business Lease: $63/Mo.
Order Code #500605

## DESKTOP SOFTWARE DESCRIPTIONS

**MS Office 97 Small Business Edition (SBE) includes:**
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

Plus your choice of Bookshelf or Encarta

**MS Home Essentials includes:**
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0

## *NEW* DELL POWEREDGE SERVERS

**Common features:** ◆ 512KB L2 Cache ◆ Integrated Ultra-Wide SCSI-3 Controller ◆ Intel® EtherExpress™ Pro/100 NIC ◆ Intel LANDesk® Server Manager v2.5x ◆ Dell Server Assistant CD ◆ 3 Year Limited Warranty†

**DELL® POWEREDGE® 2200 SERVER**
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 96MB ECC EDO Memory
- 4GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- MS Windows NT® Server 4.0

★ *Upgrade to a 9GB Ultra-Wide SCSI-3 Hard Drive, add $450.*
★ *Upgrade to 128MB ECC EDO Memory, add $220.*

**$4999**
Business Lease: $179/Mo.
Order Code #250072

**DELL POWEREDGE 2200 SERVER**
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory
- 2GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- 3Com OfficeConnect Hub 8/TPC

★ *Upgrade to 64MB Memory, add $239.*
★ *Upgrade to a 4GB Ultra-Wide SCSI-3 Hard Drive, add $320.*
★ *4/8GB SCSI DAT Tape Backup, add $749.*

**$3249**
Business Lease: $119/Mo.
Order Code #250070

# HAS NEVER BEEN
# BOTTOM LINE.

## DELL LATITUDE NOTEBOOKS

**Common features:** ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts 12X Variable CD-ROM, 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with *NEW* 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

***NEW* DELL LATITUDE® LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB RAM (72MB Max.)
- 2.1GB Hard Drive
- 2nd Lithium Ion Battery
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB RAM, add $299.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *3Com LAN+ 33.6 Modem PC Card, add $349.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Leather Carrying Case, add $129.*

**$3999‡**
Business Lease: $144/Mo.
Order Code #800130

***NEW* DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 24MB RAM (72MB Max.)
- 2.1GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $199.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Leather Carrying Case, add $129.*
★ *3Com 10Base-T Network Card, add $139.*
★ *Dell Latitude LM Port Replicator, add $159.*

**$3599‡**
Business Lease: $130/Mo.
Order Code #800132

***NEW* DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Nylon Carrying Case, add $69.*

**$3299‡**
Business Lease: $122/Mo.
Order Code #800140

**DELL LATITUDE LM P133ST**
133MHz PENTIUM® PROCESSOR

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive

★ *Upgrade to 24MB RAM, add $100.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Nylon Carrying Case, add $69.*
★ *3Com 10Base-T Network Card, add $139.*

**$2799‡**
Business Lease: $104/Mo.
Order Code #800138

**available. What can we build yours to do?**

MMX™ intel inside pentium PROCESSOR

TO ORDER TOLL-FREE
**800-545-1587**
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03265

DELL®

The Optima has a terrific printed installation guide but little documentation other than that. Its documentation for technical users is available only on disc, not in printed form, which some people might view as a drawback. Phone support policies are barely adequate at 10 hours per weekday and none on weekends, but the company will cross-ship replace your modem. *Hayes, 770/840-9200, www.hayes.com*

READER SERVICE NO. 615

Diamond offers great support policies, with support lines open 14 hours on weekdays and 8 hours on Saturdays.

## Diamond Multimedia SupraExpress 336i Sp with ASVD

4

**PRO:** Great support policies, excellent getting-started manual

**CON:** Slightly expensive

THE SUPRAEXPRESS 336I SP WITH ASVD is one of many good general-purpose modems. It costs $130 (average on the chart, but slightly expensive overall), and has a nice list of features and great support.

Extras include most of what a small business or a SOHO user could use: FlashROM for easy upgrades, a speakerphone that operates in full-duplex mode, simultaneous voice and data, distinctive ring, and Caller ID. On the other hand, the software bundle could be a little more robust—you get just FaxTalk and Comit and no extras. The former is a very good program, but it isn't quite as intuitive as QuickLink II.

Installation was uneventful—it worked just as Plug and Play should. The documentation gave us clear instructions on how to install the modem in new and not-so-new computers and with different operating systems. There was no glossary or index, however. Diamond offers great support policies, with support lines open 14 hours on weekdays and 8 hours on Saturdays. Cross-ship replacement of defective modems and a 30-day money-back guarantee round out the package. Our only complaint is that the support lines aren't toll-free. *Diamond Multimedia, 800/727-8772, www.diamondmm.com*

READER SERVICE NO. 616

## Shark Multimedia Baby Tiger 336R

5

**PRO:** Fast, inexpensive, excellent installation guide

**CON:** Paltry support offerings, skimpy documentation

JUDGING BY its rather unusual name, we weren't sure if this was a modem or some hot new toy. Once we played with it a bit, however, Shark Multimedia's Baby Tiger turned out to be a pretty good modem. Like the Zoom, the Baby Tiger is fast and cheap—only $95. But unlike the 5-inch Zoom, the Baby Tiger is no baby; it's a full-size 8-inch-long board. It has a fine collection of features, but in-depth documentation is not how this Tiger earned its stripes.

This is the first modem we've seen from Shark Multimedia, a 2-year-old company, and we must admit that it's made a great first impression. The Baby Tiger came with a copy of Global ▶

TEST REPORT

# *Hayes Optima, Shark, Zoom Move Files Fastest*

Wisecom also makes impressive debut in a crowded 33.6-kbps field.

| | INTERNAL MODEMS | Effective transfer rate (kbps)[1] | Transfer time per MB (min:sec) |
|---|---|---|---|
| 1 | U.S. Robotics Courier V.Everything* | 62.4 | 2:44 |
| 2 | Zoom FaxModem V.34I Plus* | 64.8 | 2:38 |
| 3 | Hayes Optima 336B Internal Business Modem | 67.8 | 2:31 |
| 4 | Diamond Multimedia SupraExpress 336i Sp with ASVD | 62.1 | 2:45 |
| 5 | Shark Multimedia Baby Tiger 336R | 64.8 | 2:38 |
| 6 | Wisecom Accelerator IV 33600 Voice Internal | 63.2 | 2:42 |
| 7 | Practical Peripherals Practical Internet Kit | 61 | 2:48 |
| 8 | Hayes Accura 336 Total Gaming Solution | 60.6 | 2:49 |
| 9 | Boca Research 33.6 Game/Business Modem | 60.6 | 2:49 |
| 10 | Practical Peripherals Practical 336 Voice/Data/Fax | 56.9 | 3:00 |

*Best Buy

phone line test  file type test  [1]With compression.

**HOW WE TEST** We install an identical pair of modems in two Gateway Pentium MMX-200s, each containing 32MB of SDRAM. We connect the modems through a TAS simulated public phone network that uses Hayes 230-kbps ESP serial cards. We measure the modems' transfer rate using the phone line test and the file type test, as outlined in EIA/TIA TSB 37 and 38b. For the phone line test, we send a 328K text file over 55 different line conditions, which represent 95 percent of the line conditions found in the U.S. For the file type test, we send a 983K .gif file, a 328K .doc file, a 197K .exe file, a 131K .zip file, and a 524K mix of these four file types over the same line condition eight times. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

.WORK THE WEB™

## THE NEW WEB-TUNED LOTUS 1·2·3 HAS ARRIVED ▸ WHY JUST CRUNCH NUMBERS WHEN YOU CAN CRUNCH COMPETITORS?

**INTRODUCING LOTUS SMARTSUITE® 97 WITH THE NEW 1·2·3® 97.** The Web is not a toy. With SmartSuite 97, it can be a serious competitive advantage. Now, from inside any Lotus 1-2-3 spreadsheet, you can grab the most current market data for your sales forecast – red-hot off the Web. Then publish the forecast directly to a Lotus Notes® database and onto your company intranet. So, in this ruthlessly competitive world, you and your coworkers can be armed with up-to-the-second information that can help you do your jobs more effectively.

**THE FIRST OFFICE SUITE SPECIFICALLY DESIGNED TO WORK THE WEB.** SmartSuite 97 is web-conscious through and through. Each application lets you connect immediately to whatever information is vital to the task at hand. And each application makes it easy to publish your work onto the Net, empowering others to make the best decisions.

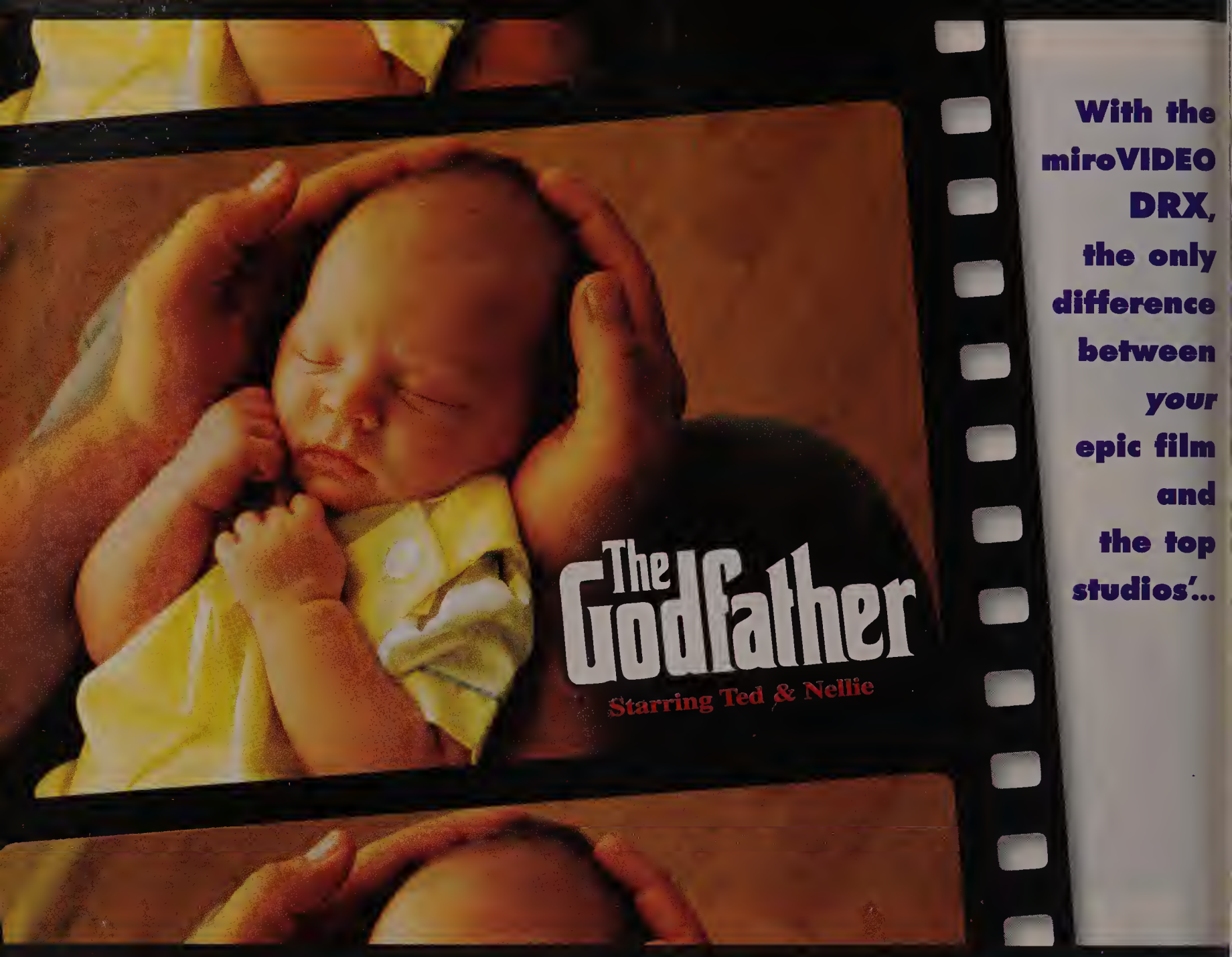
SmartSuite 97 also makes it easy to stay organized as you stay up-to-date. The Lotus SmartCenter™ lets you create a set of personalized drawers for applications, files and every source of information. (The SmartCenter Internet drawer provides live Web access to news and more.) It's all about getting more stuff done and staying ahead of the competition. If not crunching them entirely. SmartSuite is included with IBM® Aptiva,® ThInkPad® and PC desktops, as well as AST® Advantage PCs. For your free SmartSuite 97 trial CD, call us at 1-800-TRADE-UP, ext. C894, or visit **www.lotus.com/smartsuite.**

**SMARTSUITE.97**

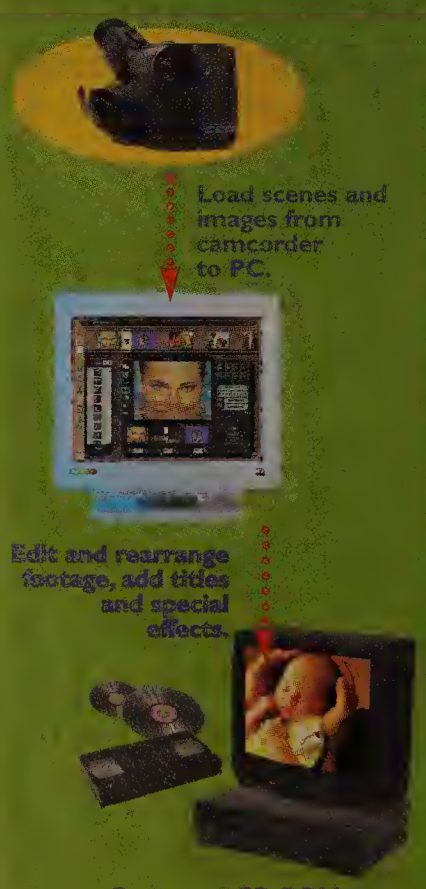
1·2·3 97
spreadsheet
**WORD PRO®**
word processor
**APPROACH®**
database
**FREELANCE GRAPHICS®**
presentation graphics
**ORGANIZER®**
time management
**SCREENCAM®**
multimedia tool

Lotus.
Working Together®

Versions of SmartSuite are available for Windows® 95, Windows 3.1 and OS/2.® In Canada, call 1 800 GO LOTUS. ©1997 Lotus Development Corporation, 55 Cambridge Parkway, Cambridge, MA 02142. All rights reserved. Lotus, Lotus SmartSuite, 1-2-3, Lotus Notes, Word Pro, Approach, Freelance Graphics, Organizer, ScreenCam and Working Together are registered trademarks and SmartCenter and Work the Web are trademarks of Lotus Development Corp. All other company and product names are registered trademarks or trademarks of their respective companies.




**With the miroVIDEO DRX, the only difference between *your* epic film and the top studios'...**




## ...is about $40 million.

Maybe you're the next Coppola. Maybe you just cherish the wonder of your own family. Or maybe you want to make your brother a wedding video he can't refuse. Any which way, you can.

The **miroVIDEO DRX** turns raw video footage into a studio-quality motion picture. Unlike other cards in its class, the **DRX** offers professional non-linear digital video editing technology (just like the pros use) that lets you re-sequence scenes in any order you like, making movie creation and edits as easy as yelling "CUT!" And it comes with MGI's VideoWave publishing software so you can choose from a range of wipes, fades, zooms, titles, special effects and loads of super cool scene transitions. Get ready to:

- **Use the power of full-motion video to create a Web site that'll wow the critics.**
- **Turn presentations or training tapes into show-stoppers.**
- **Input *and* output to VHS, Super VHS, Video 8 or Hi 8.**
- **Distort actors' faces with Kai's Power Goo™ (included free!)**
- **Revel in high quality resolution (320x480 pixels), and fast action video capture (60 fields/second) at 9:1 compression.**

**And at $299, it's professional technology at a price *you* can't refuse!**

Call us today at **1-800-249-6476** for more information, or visit our website at http://www.miro.com

miro

...move your mind

System requirements: Pentium®– class PC with 16MB RAM, 1 open 32-bit PCI version 2.0 (or higher) master slot, EIDE 30 MB free hard disk space, 8 bit (256 colors) graphics board, Sound Card (SB and MS Soundsystem compat CD-ROM drive, & Windows 95. miro is a trademark of miro Computer Products AG. All other company or product names are trademarks or registered trademarks of their respective owners. © miro Computer Products Inc 1

Circle 150 on reader service card

# RUFF, WOOF, WOOF, ERRRRRRR, WOOF...
# RUFF, WOOF, ERRRR, WOOF, WOOF...

ARTMEDIA'S 17" MONITOR. VOTED BEST 17" MONITOR.

HE EDITORS AT BYTE MAGAZINE HAVE OMETHING TO BARK ABOUT. BYTE JUST OTED ARTMEDIA'S 17" MONITOR THE EST 17" MONITOR. MAYBE IT WAS OUR DVANCED TRINITRON TECHNOLOGY, HE FLATTER SCREEN OR THE SUPER-INE PITCH. OUR MONITORS OFFER HARPER RESOLUTION, BETTER FOCUS,

LESS DISTORTION AND HIGHER BRIGHTNESS—BASICALLY, JUST A BETTER PICTURE! AND A SOUND INVESTMENT. SO IF YOU WANT THE BEST PROFESSIONAL MONITORS ON THE MARKET, LISTEN TO THE EXPERTS. THEY KNOW WHAT THEY ARE BARKING ABOUT.

TMEDIA TN-1885T
TE JANUARY 1997.

BYTE BEST

ArtMedia®
WHERE REALITY IS TRUE

energy EPA POLLUTION PREVENTER

TCO 1992

ARTMEDIA USA 2272 CALLE DEL MUNDO SANTA CLARA, CA 95054, USA TEL: 1-800-682-7863 FAX: 1-408-980-8999 HTTP://WWW.ARTMEDIA.COM
PACIFIC TECHNOLOGY CO., LTD. 7F, NO. 285, CHUNG HSIAO E. RD., SEC. 4, TAIPEI, TAIWAN, R.O.C. TEL:886-2-778-5850 FAX:886-2-741-9521 HTTP://WWW.ARTMEDIA.COM.TW

**Circle 20 on reader service card**

Village's FaxWorks Voice, one of the better communications programs around. And in case you want to use the Baby Tiger to turn your PC into a full-duplex speakerphone or voice-mail system, the package includes a microphone (but you'll need to supply the speakers), DSVD, distinctive ring, and Caller ID.

The Baby Tiger's overall performance was terrific. It tied with the Zoom for second place in overall speed. Although the modem is not Plug and Play, installation was a breeze. Just be sure you read the quick-start guide, the only documentation the modem comes with. The catch—which you'll miss if you don't read this guide—is that with Windows 95, you have to install the modem as a Win95 Multi-Function Adapter and not as a Modem in the Add New Hardware Wizard. If you miss this step, the modem won't run. The guide describes the process precisely and even has color photographs for computer neophytes.

Shark skimps on the telephone technical support—it's a toll call, and the lines are open only 10 hours per day during the week. The warranty is a short three years. *Shark Multimedia, 800/800-3321, www.sharkmm.com*

READER SERVICE NO. 617

## Wisecom Accelerator IV 33600 Voice Internal

6

**PRO:** Above-average performer, inexpensive, toll-free tech support

**CON:** Brief documentation resulted in nightmarish installation

ARE YOU THE KIND OF PERSON who tends to fly off the handle when things don't go as planned? If so, we recommend you avoid this modem. The minimal documentation provides little guidance—for example, it neglects to mention that you can't complete the installation process without a Windows 95 CD-ROM in hand, which is sometimes necessary when a modem has VoiceView.

Obviously, the Accelerator IV didn't make a great first impression, but once we got past the installation, we discovered this modem is a lot like the Zoom: It runs near the head of the pack on file transfers, copes well with all kinds of telephone lines, and, at $99, costs less than most of the competition. If you're running a small or home office, the Wisecom has two items the Zoom lacks that could be worth the extra $10: voice mail and a full-duplex speakerphone. The modem's only software is a communications package called SuperVoice, which comes with no documentation. If you can figure it out on your own, it's a good program, if rudimentary.

Support is a mixed bag. Wisecom offers toll-free tech support, but the lines are open only 8 hours each weekday. And Wisecom doesn't provide cross-ship replacement if your modem stops working. *Wisecom, 888/947-3266, www.wisecominc.com*

READER SERVICE NO. 618

> The Wisecom has two features that the Zoom lacks: voice mail and a full-duplex speakerphone.

## Practical Peripherals Practical Internet Kit

7

**PRO:** Great support policies, nice software bundle

**CON:** Generic, confusing manual made for a somewhat tricky installation; no security features

IT'S NOT HARD TO FIGURE OUT what this modem is designed for. Practical Peripherals packed a lot into its Practical Internet Kit and managed to keep the price down to only $99. You get an extraordinary software bundle that includes QuickLink II, McAfee's VirusScan, and Quarterdeck's Webtalk, though to use the last, your computer will need its own sound card, microphone, and speakers.

That said, the Practical Internet Kit is slow, pushing all file types below the average speed on clean phone lines. On medium and poor phone lines, it was one of the slowest of the 14 modems we tested this month. ▶

## I Want My 56K!

NO 56-KBPS INTERNAL MODEMS were available in time for the Top 10, but they will be by the time you read this. Until then, vendors are promising upgrades to consumers who buy their 33.6-kbps modems beforehand. Your options: the U.S. Robotics technology, dubbed x2, and the Rockwell/Lucent offering, called K56flex. Practical Peripherals is the only vendor that lets you choose between the two.

| | MODEM | Protocol supported | Upgrade method | Price [1] | Upgrade comments |
|---|---|---|---|---|---|
| 1 | U.S. Robotics Courier V.Everything* | x2 | FlashROM | $60 | Free if 33.6-kbps USR modem was registered for upgrade before 2/28/97. |
| 2 | Zoom FaxModem V.34I Plus* | K56flex | trade-in | $59 | No upgrades on modems purchased after 3/31/97. |
| 3 | Hayes Optima 336B Internal Business Modem | K56flex | trade-in | $89 | Through 6/30/97, free upgrade if 33.6 modem was purchased between 2/1/97 and 4/15/97. |
| 4 | Diamond Multimedia Supra-Express 336i Sp with ASVD | K56flex | trade-in | $150 | Diamond still working out the details; no upgrades after 6/30/97. |
| 5 | Shark Multimedia Baby Tiger 336R | K56flex | trade-in | $40 | No time restrictions on trade-in. |
| 6 | Wisecom Accelerator IV 33600 Voice Internal | K56flex | trade-in | $49 | Through 10/31/97. |
| 7 | Practical Peripherals Practical Internet Kit | K56flex or x2 | trade-in | $89 | Through 6/30/97. |
| 8 | Hayes Accura 336 Total Gaming Solution | K56flex | trade-in | $89 | Through 6/30/97, free upgrade if 33.6 modem was purchased between 2/1/97 and 4/15/97. |
| 9 | Boca Research 33.6 Game/Business Modem | K56flex | trade-in | $99 | No time restrictions. |
| 10 | Practical Peripherals Practical 336 Voice/Data/Fax | K56flex or x2 | trade-in | $89 | Through 6/30/97. |

* Best Buy

[1] Shipping charges extra.

# Meet The Perfect Partner For Business Travel. At An Economy Fare.

When it comes to notebook performance, the new Compaq Armada 1520 really soars above the rest. For starters, it has a powerful 133MHz Pentium® processor and 16MB EDO RAM expandable to 80MB. Plus, it has an integrated modem and integrated AC adapter. Even better, the Armada 1520 allows you to easily access your hard drive, floppy drive, and CD-ROM drive simultaneously.

The Armada 1520 also includes the quality and reliability you'll find only in a Compaq. So call today and get everything you need to manage your business—at home or on the road—without compromising your budget. At $2,199* it's a first-class deal.

**Compaq Armada 1520 ◈ $2,199***

- 133MHz Pentium® Processor With 256K L2 Cache
- 16MB EDO RAM (expandable up to 80MB)
- 1.0GB Hard Drive
- 11.3" CSTN SVGA Color Display
- Integrated Components:
  10X CD-ROM
  3.5" 1.44MB Diskette Drive
  AC Adapter
  33.6Kbps Data/Fax Modem
- Two 32-Bit CardBus Type II Slots (or one Type III)
- Li-Ion Battery (also supports Enhanced Smart NiMH)
- Dual Bay Supports Floppy Drive or 2nd Battery for up to 6 Hours of Battery Life**
- Windows® 95 or Windows NT 4.0
- 1-Year Worldwide Limited Warranty†

COMPAQ

**1-800-308-7774**
For Your Nearest Compaq Authorized Reseller
Or Visit Us At www.compaq.com

*All prices shown are estimated street prices. Reseller prices may vary. Other models are available. Battery packs and certain options are covered by a One-Year Limited Warranty. Modem is not installed. **Battery life is estimated based on normal usage and with advanced power management. †The Compaq Armada is covered by a One-Year Worldwide Limited Warranty with pick-up/carry-in service. Offer available in the U.S. only. © 1997 Compaq Computer Corporation. All rights reserved. Compaq and the Compaq Logo registered U.S. Patent and Trademark Office. Products, prices and programs are subject to change without notice. Windows is a registered trademark of Microsoft Corporation. The Intel Inside Logo and Pentium are registered trademarks and the Pentium Processor Logo is a trademark of Intel Corporation. Other products are trademarks of their respective companies.

intel inside pentium® PROCESSOR

Practical cut corners on documentation and security. The modem offers no password protection, no FlashROM upgradability, and no Caller ID. The installation guide is the only documentation—there's no technical manual. The installation guide covers all Practical modems, so some illustrations, including the jumper layout on this non–Plug and Play modem, don't match the modem itself. Luckily, there was a sticker on the modem that showed the proper layout.

Considering how difficult the documentation was to understand and decipher, it's a good thing Practical Peripherals has decent support hours—9 hours on both Saturday and Sunday, as well as 10 hours a day during the week—and cross-ship replacement. Practical Peripherals is the only vendor on our chart to offer a lifetime warranty. *Practical Peripherals, 770/441-0896, www.practinet.com*

READER SERVICE NO. 619

## Hayes Accura 336 Total Gaming Solution

8

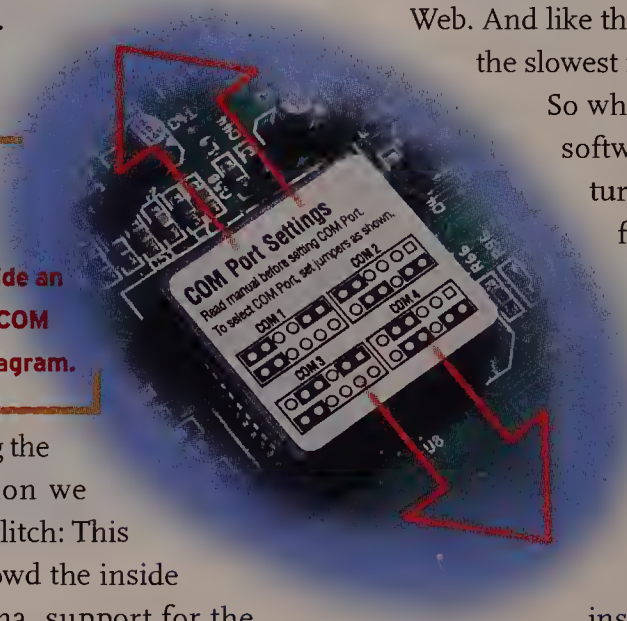
**PRO:** Great software bundle, flawless installation

**CON:** Mediocre documentation, expensive, below-average speed

HAYES CLEARLY INTENDED this modem to be a sort of oversized stocking stuffer, though given its $179 price, you'd have to be pretty darn good to get this in your stocking. The Total Gaming Solution comes packed with a microphone, headphones, a full-duplex speakerphone with ASVD capability, and two CD-ROMs of games and applications—in short, enough stimulation to keep a bored teenager quiet until the ISDN installer shows up.

The Accura won't win any price/performance prizes. On clean telephone lines it transferred files slightly below average; on mediocre and poor lines it dropped well below the pack. It came with a generic Hayes installation guide that's thorough enough, especially considering the trouble-free Plug and Play installation we encountered. One possible installation glitch: This modem is 8 inches long and might crowd the inside of your PC. As with the Hayes Optima, support for the Accura is fairly basic. *Hayes, 770/840-9200, www.hayes.com*

READER SERVICE NO. 620




**The Practical Peripherals modems provide an easy-to-read COM port layout diagram.**

## 9 Boca Research 33.6 Game/Business Modem

**PRO:** Great software bundle

**CON:** Below-average performer, tricky installation

THIS COMBINATION game/business modem includes ten games, some of which are multiuser, and several business software applications. For example, you and a colleague at another computer could both launch FarSite Lite to look at, alter, and discuss a document that appears on both of your screens, thanks to the modem's DSVD capability. Or you could compete against friends in a game of WarCraft or Terminal Velocity, keeping up a steady banter to distract them as you zoom in for the kill. At $120, this is not a compelling package unless you really want the software bundle and don't mind less-than-blazing performance.

The Boca is among the pokiest modems we tested. Its performance was roughly equal to that of the Hayes Accura and the Practical Internet Kit. In other words, it was below average. Boca bundles the great QuickLink Message Center and backs the unit with a solid five-year warranty, but the company doesn't beef up the package with any extras such as cross-ship replacement. The installation wasn't by-the-books Plug and Play, either. The CD-ROM with the modem drivers wasn't labeled clearly. After we figured out which was the correct disc, we were told to put in the Windows 95 disc. After this step, the modem installed okay. *Boca Research, 561/997-7202, www.bocaresearch.com*

READER SERVICE NO. 621

> The Total Gaming Solution comes with enough stimulation to keep a bored teenager quiet until ISDN arrives.

## Practical Peripherals Practical 336 Voice/Data/Fax

10

**PRO:** Excellent support policies, preconfigured voice-mail menu and message system, full-duplex speakerphone

**CON:** Slowest modem on chart by a wide margin

PRACTICAL PERIPHERALS designed the Practical 336 Voice/Data/Fax to fill the business niche in the same way that the Practical Internet Kit is designed for the Web. And like the Internet Kit, the 336 is slow—in fact, it's the slowest modem in the Top 10.

So what put this $119 modem on the chart? Its software bundle and well-rounded list of features, such as distinctive ring, Caller ID, and full-duplex speakerphone.

The modem comes loaded with software—the same bundle provided with the Internet Kit plus Practica Message Center LE, a decent fax/data/voice package that supports voice mail. A microphone is also included. And though the modem isn't exactly overflowing with documentation, it does provide a decent installation manual, with easy-to-follow illustrations and descriptions.

Practical Peripherals' support policies are among the best on the chart, with a lifetime warranty, cross-ship replacement, and weekend tech support. Unfortunately, the call is on your dime. *Practical Peripherals, 770/441-0896, www.practinet.com*

READER SERVICE NO. 622

*Eric Hellweg is a staff editor for* PC World. *Dan Littman is a frequent contributor and has been reviewing computer hardware and software for more than ten years. Testing by Elliot Kirschling and Susan Silvius of the PC World Test Center.*

**For more information about all products in this article, circle reader service no. 901.** ■

re you going to buy *another* computer from this guy?

Performance
The Research and Development Team
at EPS Technologies tirelessly
explores and institutes the newest
and most advanced technology in
order to stay ahead of the curve
in personal computing

# Probably Not!

YOU'VE BEEN TO THE "MEGA STORES."

YOU'VE BEEN TO THE MAGAZINE RACKS.

YOU HAVE DONE YOUR HOMEWORK.

*NOW,* YOU ARE READY TO MAKE YOUR DECISION. PERFORMANCE, KNOWLEDGE, SERVICE, QUALITY ARE ALL THE PRIORITY COMPONENTS THAT ADD *UP* TO YOUR *BOTTOM* LINE...

*value.*

*Knowledge*

The EPS Sales Team makes it policy to be able to answer any questions our customers may have. Knowledge is the key to any industry, and knowing what the customer wants is where EPS excels.

EPS TECHNOLOGIES
"a tradition of value and performance"

EPS TECHNOLOGIES
Service
Fast and courteous service is one o
the most important aspects of th
customer relationship. Being a
industry leader means constantl
gearing up for excellen
customer service
Call 1.800.447.0921
Or visit our website at www.epstech.com

SO WHEN YOU'RE READY TO BUY A TOASTER, THE MEGA STORE IS THE PLACE TO GO. AFTER ALL, YOU'RE JUST PUTTING BREAD INTO IT. BUT, WHEN YOU'RE RESEARCHING THE BEST VALUE ON YOUR NEXT COMPUTER, YOU'LL FIND EPS TECHNOLOGIES ON YOUR BOTTOM LINE. OFFERING A FULL RANGE OF NOTEBOOK AND DESKTOP PC TECHNOLOGY, EPS HAS THE SYSTEM JUST RIGHT FOR YOU. CALL ONE OF OUR FRIENDLY AND KNOWLEDGEABLE CUSTOMER SERVICE REPRESENTATIVES TO FIND OUT MORE ABOUT THE ABSOLUTE BEST VALUES IN COMPUTERS. AFTER ALL, YOU'RE PUTTING *REAL* BREAD INTO THIS.

EPS® TECHNOLOGIES

"a tradition of value and performance"

## Quality

Quality products are the cornerstones of today's competitive successful companies. EPS Technologies stands behind a long tradition of the highest quality products and the highest quality customer service.

# your *bottom* line

MOBILE TECHNOLOGY

## Apex™ SC-166

- 12.1" SVGA Dual Scan Color Display
- 166MHz Pentium Processor
- 16MB RAM, 256K L2 Cache
- 1.4GB Hard Drive / 3.5" Floppy
- 10X CD-ROM Drive (Removable)
- Infrared Interface Support
- 16-Bit Built-in Sound with Speakers
- Integrated Personal Touchpad
- Two Type II / One Type III PCMCIA Slot
- Lithium Battery / AC Adapter
- Microsoft Windows95
- Quicken Deluxe
- Lotus SmartSuite or Corel Office Professional 7
- Two-Year Warranty, 30-Day Money-Back Guarantee
- Carrying Case

**$1995**

BUSINESS LEASE **$66/mo.**

## Apex™ XC-166

- 12.1" SVGA Active Matrix Color Display
- 166MHz Pentium Processor
- 24MB RAM, 256K L2 Cache
- 1.4GB Hard Drive / 3.5" Floppy
- 8X CD-ROM Drive (Removable)
- Infrared Interface Support
- 16-Bit Built-in Sound with Speakers
- Integrated Personal Touchpad
- Two Type II / One Type III PCMCIA Slot
- Lithium Battery / AC Adapter
- 33.6 PCMCIA Fax Modem
- Mobile Car Adapter
- Microsoft Windows95
- Quicken Deluxe
- Lotus SmartSuite or Corel Office Professional 7
- Two-Year Warranty, 30-Day Money-Back Guarantee
- Carrying Case

**$2495**

BUSINESS LEASE **$82/mo.**

## Apex™ M-166

- 12.1" SVGA Active Matrix Color Display
- 166MHz Pentium Processor **WITH MMX TECHNOLOGY**
- 32MB EDO RAM, 256K L2 Cache
- 2MB EDO PCI Graphics
- 2.1GB Hard Drive / 3.5" Floppy
- 10X CD-ROM Drive (Removable)
- Zoomed Video Port, Video In Jack
- Infrared Interface Support
- 16-Bit Built-in Sound with Speakers
- Integrated Personal Touchpad
- Two Type II / One Type III PCMCIA Slot
- Lithium Battery / AC Adapter
- 33.6 PCMCIA Fax Modem
- Mobile Car Adapter
- Microsoft Windows95
- Quicken Deluxe
- Microsoft Office 97 Small Business Edition
- Lotus Organizer
- Two-Year Warranty, 30-Day Money-Back Guarantee
- Ballistic Nylon Carrying Case

**$3095**

BUSINESS LEASE **$102/mo.**

## Apex™ M-200

- 13.3" SVGA Active Matrix Color Display
- 200MHz Pentium Processor **WITH MMX TECHNOLOGY**
- 48MB EDO RAM, 256K Pipeline
- 2MB EDO PCI Graphics
- 2.1GB Hard Drive / 3.5" Floppy
- 16X CD-ROM Drive (Removable)
- Zoomed Video Port, Video In Jack
- Infrared Interface Support
- 16-Bit Built-in Sound with Speakers
- Integrated Personal Touchpad
- Two Type II / One Type III PCMCIA Slot
- Lithium Battery and AC Adapter
- 33.6 PCMCIA Fax Modem
- Mobile Car Adapter
- Microsoft Windows95
- Quicken Deluxe
- Microsoft Office 97 Small Business Edition
- Lotus Organizer
- Two-Year Warranty 30-Day Money-Back Guarantee
- Ballistic Nylon Carrying Case

**$3895**

BUSINESS LEASE **$128/mo.**

DESKTOP TECHNOLOGY

## Evolution™ SC-166

- 166MHz Pentium Processor
- 16MB EDO RAM, 256K Pipeline Burst Cache
- 2.1GB EIDE Hard Drive
- 2MB PCI 64-Bit Video
- 17" Non-Interlaced (.28 Dot Pitch) MPR II Compliant, Low Radiation
- Ensonic PCI Concert Busmastering Wavetable Sound Card with Labtec Speakers
- 16X EIDE CD-ROM/1.44MB Floppy
- Internal 33.6 Fax Modem with Voice Mail, Full Duplex Speaker Phone and Caller ID
- 104 Enhanced Keyboard, Microsoft Mouse with Pad
- Microsoft Windows95
- Quicken Deluxe
- Lotus SmartSuite or Corel Office Professional 7
- Three-Year Warranty, 30-Day Money-Back Guarantee, and One-Year On-Site Service

**$1545**

BUSINESS LEASE **$51/mo.**

## Evolution™ M-166

- 166MHz Pentium Processor **WITH MMX TECHNOLOGY**
- 32MB EDO RAM, 512K Pipeline Burst Cache
- 4.3GB EIDE Hard Drive
- Diamond Stealth 3D 2MB EDO PCI 64-Bit Video
- 17" Non-Interlaced (.28 Dot Pitch) MPR II Compliant, Low Radiation
- Ensonic PCI Concert Busmastering Wavetable Sound Card with Labtec Speakers
- 16X EIDE CD-ROM/1.44MB Floppy
- Internal 33.6 Fax Modem with Voice Mail, Full Duplex Speaker Phone and Caller ID
- 104 Enhanced Keyboard, Microsoft Mouse with Pad
- Microsoft Windows95
- Quicken Deluxe
- Lotus SmartSuite or Corel Office Professional 7
- Three-Year Warranty, 30-Day Money-Back Guarantee, and One-Year On-Site Service

**$1845**

BUSINESS LEASE **$61/mo.**

## Evolution™ M-200

- 200MHz Pentium Processor **WITH MMX TECHNOLOGY**
- 32MB EDO RAM, 512K Pipeline Burst Cache
- 4.3GB EIDE Hard Drive
- Diamond Stealth 3D 4MB EDO PCI 64-Bit Video
- 17" N.I. 1600 x 1200 (.25 Dot Pitch) MPR II Compliant, Low Radiation
- Ensonic PCI Concert Busmastering Wavetable Sound Card with Labtec 2612 3-D Satelites and Subwoofer
- Labtec N-DAT Microphone
- 16X EIDE CD-ROM/1.44MB Floppy
- Internal 33.6 Fax Modem with Voice Mail, Full Duplex Speaker Phone and Caller ID
- 104 Enhanced Keyboard, Microsoft Mouse with Pad
- Microsoft Windows95
- Quicken Deluxe
- Microsoft Office 97 Small Business Edition
- Three-Year Warranty, 30-Day Money-Back Guarantee, and One-Year On-Site Service

**$2245**

BUSINESS LEASE **$74/mo.**

## Evolution™ LPII-266

- 266MHz Pentium II Processor
- 64MB EDO RAM, 512K Cache
- 6.5GB EIDE Hard Drive
- Diamond Stealth 2MB VRAM PCI 64-Bit Video (upgradeable to 4MB VRAM)
- 17" Non-Interlaced (.28 Dot Pitch) MPR II Compliant, Low Radiation
- Ensonic PCI Concert Busmastering Wavetable Sound Card with Labtec 2612 3-D Satelites and Subwoofer
- Labtec N-DAT Microphone
- 16X EIDE CD-ROM/1.44MB Floppy
- Internal 56K Fax Modem with Voice Mail, Full Duplex Speaker Phone and Caller ID
- 104 Enhanced Keyboard, Microsoft Mouse with Pad
- Microsoft Windows95
- Microsoft Office 97 Small Business Edition
- Three-Year Warranty, 30-Day Money-Back Guarantee, and One-Year On-Site Service

**$2895**

BUSINESS LEASE **$95/mo.**

EPS TECHNOLOGIES "a tradition of value and performance"

*Call 1.800.447.0921*

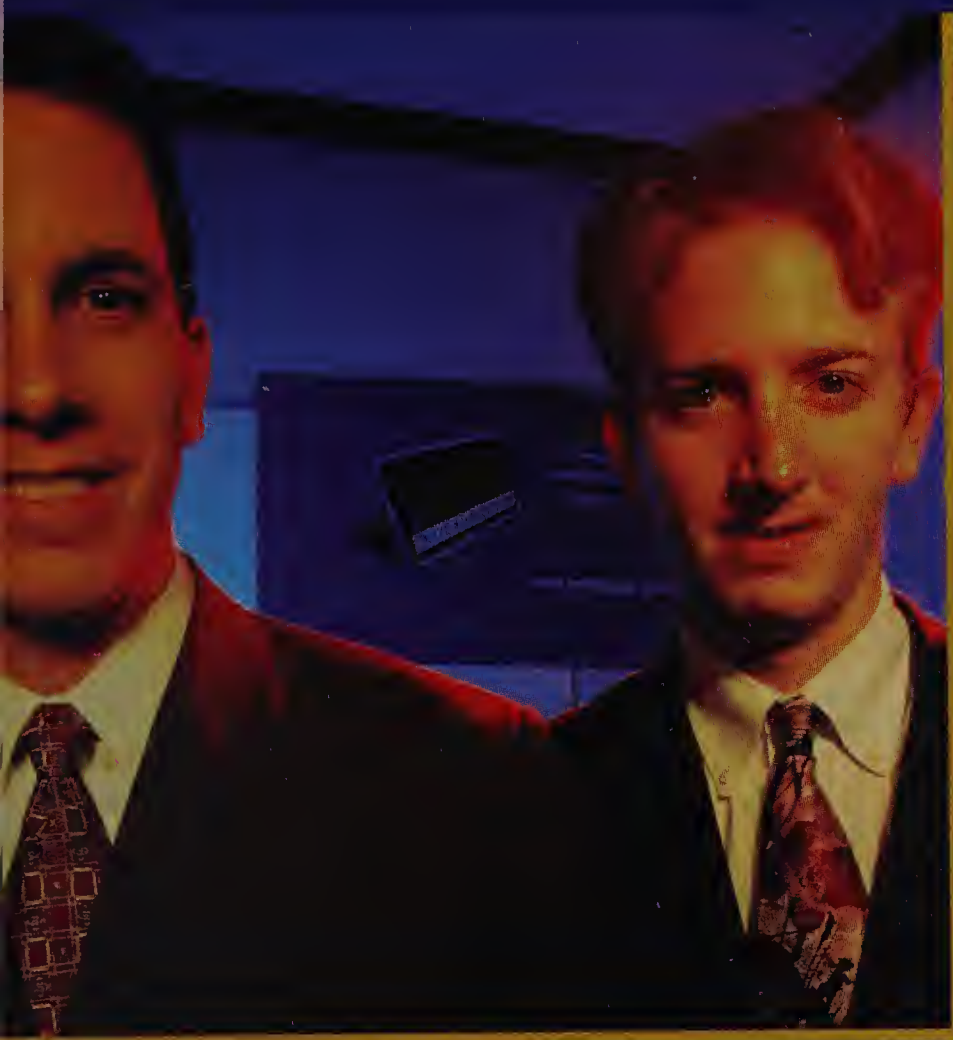
*Or visit our website at www.epstech.com*

EPS TECHNOLOGIES, Inc. 8877 South 137th Circle Omaha, NE 68137
Web Site: www.epstech.com FAX Orders 402-891-9383 Direct Line 402-895-2440
Technical Hotline 800-526-4258 Hrs: 7am-9pm M-F, 9am-4pm Sat CST

**GSA Contract No.GS35F4095D**

ref. # 9707

All brands and products are trademarks or registered trademarks of their respective holders. Prices and configurations are subject to change without notice / obligation. Business leases are based on 36 months. Lease rates are subject to change without notice / obligation. Pentium is a trademark of INTEL Corporation. Viewing dimensions may vary according to monitor size. Money back guarantee excludes shipping c



# SMALL Office Home OFFICE

FROM HIGH-RISE TO HOME: HOW TO SET UP A SMALL OFFICE THAT WORKS.

INSIDE


**190 You Can Make Money on the Web**
*Owners of four small businesses tell us how they're doing it.*

**199 Hot Picks for the Home Office**
*Cheap multifunction device, free e-mail, and more.*


EDITED BY

ANGELA FREEMAN

"I'm really surprised at how inexpensive it is to do what I'm doing." –BILL TEMBREULL

**COMPANY:** Northern Digital Classics
**SELLS:** Automotive parts, books, memorabilia, posters, T-shirts, and Web design services
**EMPLOYEES:** 2
**DESIGNED OWN SITE?** yes
**START-UP COST:** $300
**MONTHLY COST:** $350 to $500

Bill and Pat Tembreull

# You *Can* Make Money on the Web

**Ever dreamed of making a million bucks on the Web? We talked to four small businesses to find out what it takes. By Mike Hogan**

IN THE SUMMER of 1995, Jeff Bezos and his wife, MacKenzie, decided to risk it all on the Internet. They opened a cyberbookstore named Amazon.com.

Two years later, Amazon.com employs 300 people and boasts 2.5 million book titles in its catalog. It's one of the World Wide Web's most successful small businesses.

Few who have braved the wilds of Web business have achieved Amazon.com-style success. But small, nimble firms with new ideas have a unique opportunity, says Cowles/Simba Information analyst Karen Burka. "You don't need a lot of money to launch and sell a product or service online. A mom-and-pop shop...can now create an international business."

But it takes more than simply mastering the technology—that's the easy stuff, say experienced Web

PHOTOGRAPH: SCOTT WITTE

merchants. The challenges facing fledgling Web businesses are the same ones that plague any start-up—making the most of marketing and advertising dollars, maintaining top-rate customer service, and exploiting new ideas before someone else beats you to them.

The potential is awesome. By the year 2000, some 80 million people will be spending more than $4 billion a year on Net goods and services, predicts Burka. How do you get some of those cyberdollars flowing down your phone line? We interviewed several firms having different degrees of success on the Web, from mom-and-pops to empires in the making. Here's how they've done it, what it's cost them, and what they've learned along the way.

*Mike Hogan is a freelance writer living in Carlsbad, California.*

NORTHERN DIGITAL CLASSICS

## Putting "Mom-and-Pop" Into Web Commerce

BILL AND PAT TEMBREULL have been traveling to classic car shows since Bill's high school days as a hot-rod mechanic. It wasn't until recently, though, that the Pelkie, Michigan, couple could make money from their hobby.

Now they've opened Northern Digital Classics (www.ndcnorth.com), their own one-stop shop for other car nuts. NDC is a place where people with grease under their nails can go to talk cars, buy cars, or sell cars and parts.

To support the effort, the Tembreulls are cyberdistributors for a variety of companies that make automotive parts, books, memorabilia, posters, and T-shirts. They also build and display Web pages for other local businesses for only $99 a year.

"In the classic Web way of doing things, you give away some things and you sell some things," says Bill, who is the manager of Michigan Technological University's publications, photo services, and print shop department by day.

The Tembreulls are designers, not programmers, so they leaned heavily on UP.net, their ISP, to help set up their proxy domain and script their pages; a Michigan Tech student did some page-linking programming.

It cost about $300 to get started. Monthly costs run $350 to $500, including $79 for the Web site, $20 for a toll-free phone number, and a percentage of sales paid to credit card companies.

The tough part is promoting their site. They had no trouble getting listed in search engines and linking to other car sites, but they haven't bought any ads yet.

Things are starting to pick up, says Pat, allowing the Tembreulls to clear a few hundred dollars a month after expenses. But they aren't in it just for the money.

"The unique thing about the Web is the friendliness of it," says Bill. "I make a sale for a company and a sale for myself, and I make a friend talking to someone who is doing the same thing I'm doing."

### Five Tips to Get You Going

1 **Use the tools.** Don't copy a real-world business to the Web. Offer a unique service, and make use of the Net's graphic nature and interactivity to stay ahead of the competition.

2 **Spend money to make money.** Expect to lay out a significant percentage of operating costs on marketing—how much you'll need depends on the type of business you plan.

3 **Listen to your customers.** Customer satisfaction can make or break your business. Encourage feedback via e-mail, and make changes as needed.

4 **Farm out the grunge work.** You don't have to do everything yourself. Outsource site creation and maintenance, and concentrate on your business.

5 **Get going.** There are no barriers—financial, governmental, or otherwise—to starting a business on the Web. So what are you waiting for?

J&D RESOURCES

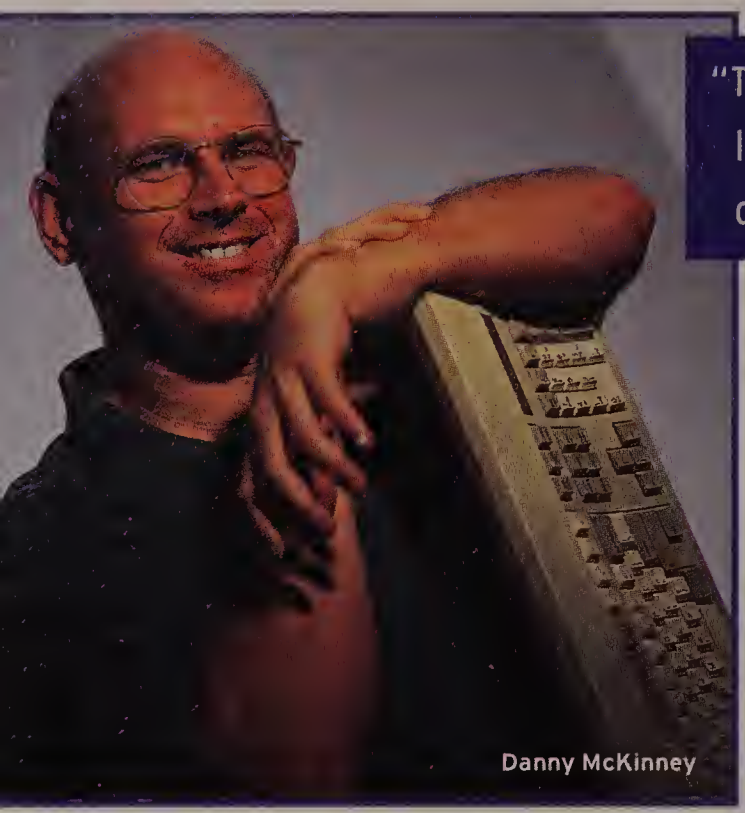
## A Perfect Match

J&D RESOURCES found a way to make a buck in cyberspace earlier than most businesses. The six-member personnel placement agency has operated a Web site from its Memphis office for more than two years—in fast-forward Web time, that makes them pioneers.

J&D's secret weapon? Danny McKinney. A 15-year background in data processing helps McKinney make the high-tech matches that are J&D's recruitment specialty. It also makes him J&D's de facto IS manager, and the brains behind the company's Web site (www.jdresources.com).

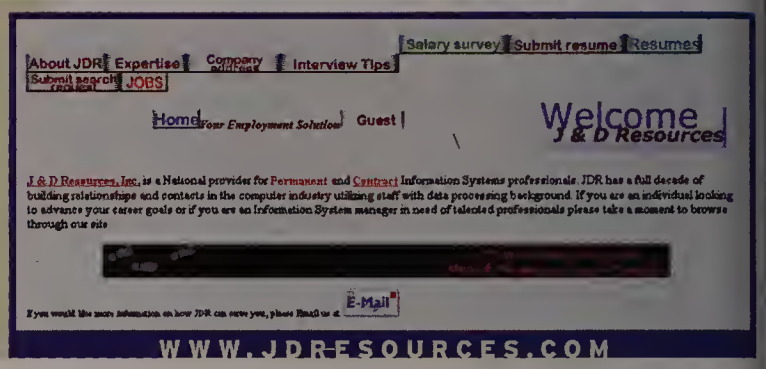
As vice president of a firm chasing $2 million in annual billings, you'd think he'd have better things to do. But McKinney says it takes only about 15 minutes a day to maintain the site.

He designed and manages the site with Microsoft FrontPage, using JPEG images and Word for Windows 95 documents ▶


Danny McKinney

"The greatest challenge is getting your site found. It doesn't do you any good to have a site if people can't find it." – DANNY MCKINNEY

**COMPANY:** J&D Resources
**SELLS:** Temporary employment and permanent placement personnel services
**EMPLOYEES:** 6
**DESIGNED OWN SITE?** yes
**START-UP COST:** $900
**MONTHLY COST:** $270




saved in HTML format. His Web links take visitors to summaries of new job openings and new applicant résumés. An applicant can fill in a profile on the site or attach a résumé to an e-mail message.

J&D Resources' ISP is Webnet Memphis, one of the few local providers that would let him update the site himself. That's critical because his company adds new jobs and applicant summaries a few times a day.

"Anyone could do this," McKinney insists. And almost anyone can afford to. It cost only $900 to set up, register, and include the site in 200 search engines. Monthly site costs break down to $50 for server space and $120 to put six PCs on an ISDN line. J&D also advertises on other career-related sites, paying around $100 a month.

"[The site] has probably increased our annual revenues by about 5 percent," says McKinney. "It more than pays for itself."

ALL ONE TRIBE

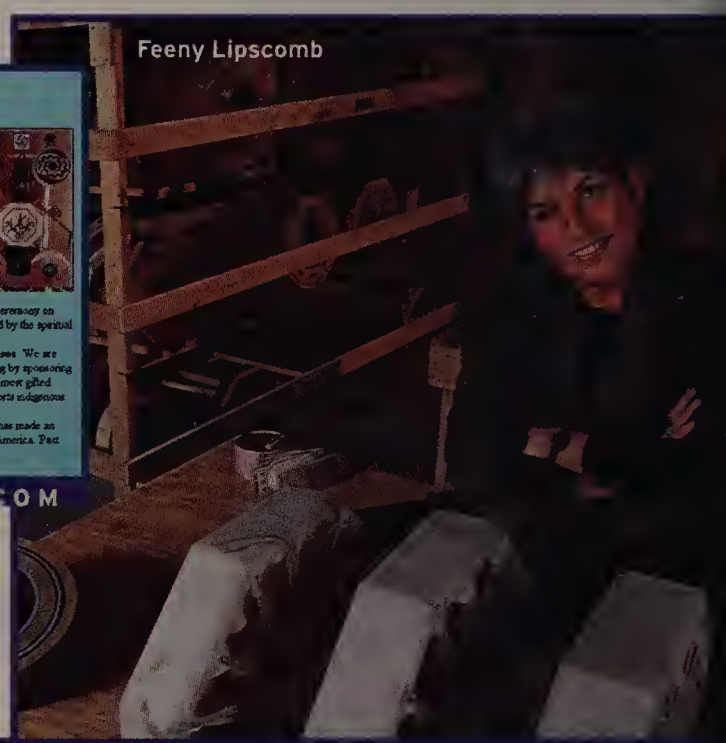
## Drums Along the I-way

A LOT OF BUSINESSPEOPLE are said to have vision. But Feeny Lipscomb's All One Tribe mail-order business in Taos, New Mexico, is one enterprise that was actually prompted by a vision. A workout on her favorite drum gave Lipscomb the inspiration to tell the rest of the world about the physical and psychic benefits of regular drumming.

All One Tribe (www.allonetribedrum.com) is Lipscomb's online attempt to reach more folks than she can from Southwest Moccasin and Drum—a store in a tiny adobe that she, life and business partner Bruce Ross, and Charles Conley have operated since 1991. Capturing a specialty market in Taos is one thing; expand that niche to the Internet, and your customer base becomes global.

The drums that Lipscomb sells cost $125 to $225 each and are created by Native American drum makers in Taos and hand-printed with indigenous designs by artists B. J. Quintana and Carl Winters. Manufacturing all-natural products by hand has its problems—including high cost of materials. But like other small business owners who've ventured onto the Web, Lipscomb's biggest challenge has been marketing.

All One Tribe had been advertising with limited success in publications such as the *New Age Journal*. Then Ross arranged Web pages for both the retail and mail-order enterprises in the middle of 1995. Neither he nor Lipscomb know much about maintaining a Web site, so their page is run by SoulZone, which rents Web space to them for $50 a month. Mar- ▶


Feeny Lipscomb

**COMPANY:** All One Tribe
**SELLS:** One-of-a-kind drums, decorative drum hangers, handmade beaters, and custom drum bags from Taos artisans
**EMPLOYEES:** 2
**DESIGNED OWN SITE?** no
**START-UP COST:** $350
**MONTHLY COST:** $250

"The Web page has gotten the word out more broadly than we could ever have done with a print ad." – FEENY LIPSCOMB

PHOTOGRAPHS: (TOP) PATRICK MURPHY LACEY; (BOTTOM) CARY HERZ

## NED

Ned knows he can book a flight

from a computer.

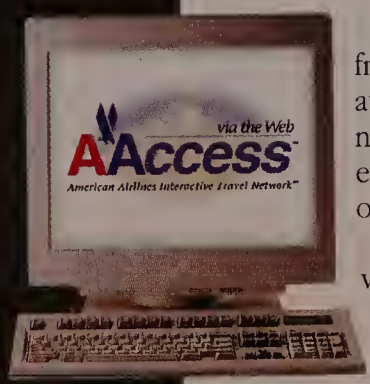
## BOB

**Bob knows from his computer he can book a flight (and earn up to 500 bonus AAdvantage® miles every time he does so), select his seat, see what movie is playing, manage his AAdvantage account, check out special AAdvantage promotions and low Net SAAver Fares™, look up all sorts of flight information and learn interesting facts most humans don't know about airplanes. For instance, did you know a Boeing 757 has a wingspan of 124′ 10″, roughly six times that of the average pterodactyl?**

**Bob did.**

So what does Bob know that you and Ned don't, besides the wingspans of extinct creatures? He knows about AAccess™ – the American Airlines Interactive Travel Network™, available on the web and with Personal AAccess™ software.

With AAccess, you can do everything from planning trips and purchasing tickets, to checking flight schedules and information, to keeping track of your AAdvantage travel awards program miles, from flights, hotel stays and rental cars, as well as award levels. All from your computer. And right now, you can earn up to 500 bonus miles with every American and American Eagle® trip you book on-line and complete by the end of the year.




So why let Bob have all the fun? Visit AAccess via the Web™ on the Internet. Or for a WINDOWS®-based link to American Airlines, call for our Personal AAccess software.

**AmericanAirlines®**

For Internet users, *AAccess via the Web* is located at **www.americanair.com** To order *Personal AAccess* for your PC, call **1-800-AACCESS (222-2377)**.

American Airlines, AAdvantage and American Eagle are registered trademarks, and Net SAAver Fares, AAccess, American Airlines Interactive Travel Network, Personal AAccess and AAccess via the Web are trademarks, of American Airlines, Inc. American Eagle is American's regional airline associate. American Airlines reserves the right to change AAdvantage program rules, regulations, travel awards and special offers at any time without notice, and to end the AAdvantage program with six months notice. WINDOWS is a registered trademark of Microsoft Corporation.

**Circle 26 on reader service card**

## Online Resources

*Ready to seek your **fortune** in cyberspace? Better stop by some of these sites first. You'll find **lots of small-business resources** to help you on your way.*

- **Internet Assigned Numbers Authority** (www.isi.edu/div/iana/) Keeps a registry of IP addresses, domain names, and other protocols.
- **Network Solutions** (www. netsol.com) Registers your domain and IP address for two years for $100, plus $50 a year.
- **CompuServe's Home Page** (www .compuserve.com) Monthly rate includes free authoring tool, plus 5MB of space for your home page. 800/ 848-8990
- **business1.com** (business1.com) Features a search engine to find government resources, business suppliers, and related links.
- **America's Business Funding Directory** (www.businessfinance.com) An engine that searches on funding sources, with links to venture capitalists, government funding, banks, and investment clubs.
- **Nest Egg IRS Tax Information Center** (nestegg.iddis.com/nestegg/ articles/taxctr.html) Contains articles on small business taxes and IRS tax forms that can be downloaded in Acrobat format.
- **Entrepreneurial Edge Online** (www .edgeonline.com) Webzine filled with how-to articles and links for small businesses.

keting costs run about $200 a month.

So far, advertising on their Web page has brought in a few thousand dollars in sales from Australia, France, Germany, and other far-flung locales. But Lipscomb figures a lot more can be made here at home, pointing to a recent *Wall Street Journal* article about corporate America's use of drums to reduce stress and promote team building.

"We've never sold all the drums we could make, but we expect to increase demand using the Internet," Lipscomb says. "Because absolutely everyone can benefit from owning a drum."

RENT.NET

# House Hunting in Cyberspace

SOMETIME AFTER his third weekend in San Francisco sleeping on friend Jed Katz's couch, Phil Marcus decided there had to be a better way to find an apartment. So in 1995 he and Katz created Rent.Net, an interactive Web source for finding a new place to hang your hat.

The company Web site (www.rent.net) lets customers quickly search listings for apartments and short-term housing. Apartment hunters can search by a combination of amenities, and view floor plans and photos. You can even get a "virtual walk-through" of some listings, thanks to unique Rent.Net software. Would-be tenants can then submit inquiries online that transmit directly to the leasing agents' fax machines.

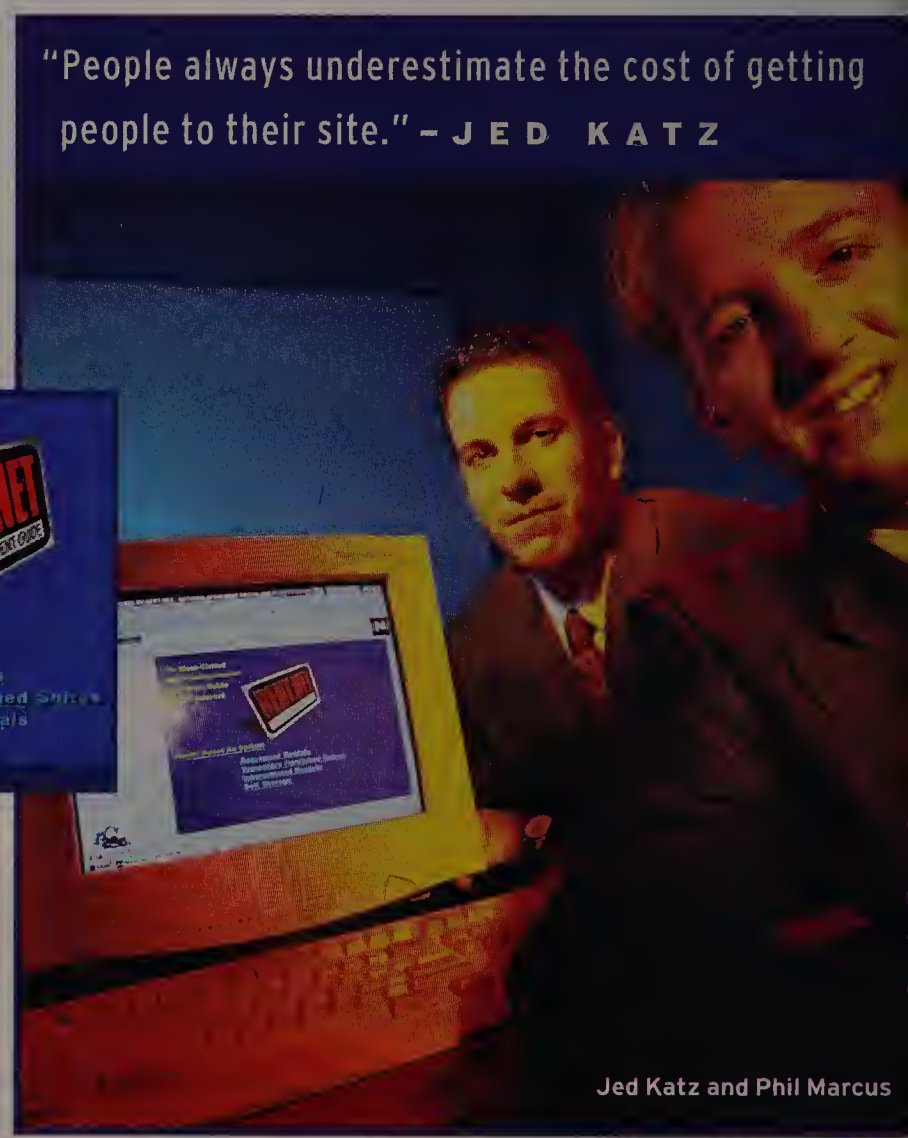
Katz and Marcus financed their venture with personal funds, a bank loan, and credit from office supply stores. The partners hired an outside firm to handle site setup duties so that they could concentrate on Rent .Net's strengths: content and customer service.

Their focus on consumers has paid off. After two years in business, Rent.Net has 45 employees and includes listings for over 1200 U.S. cities. The effort is funded by apartment owners and Web advertisers. Most of the revenue goes to marketing and advertising.

Rent.Net runs banner ads on general interest sites like search engines. But exposure isn't cheap: Katz estimates Rent.Net's monthly advertising costs in the tens of thousands of dollars.

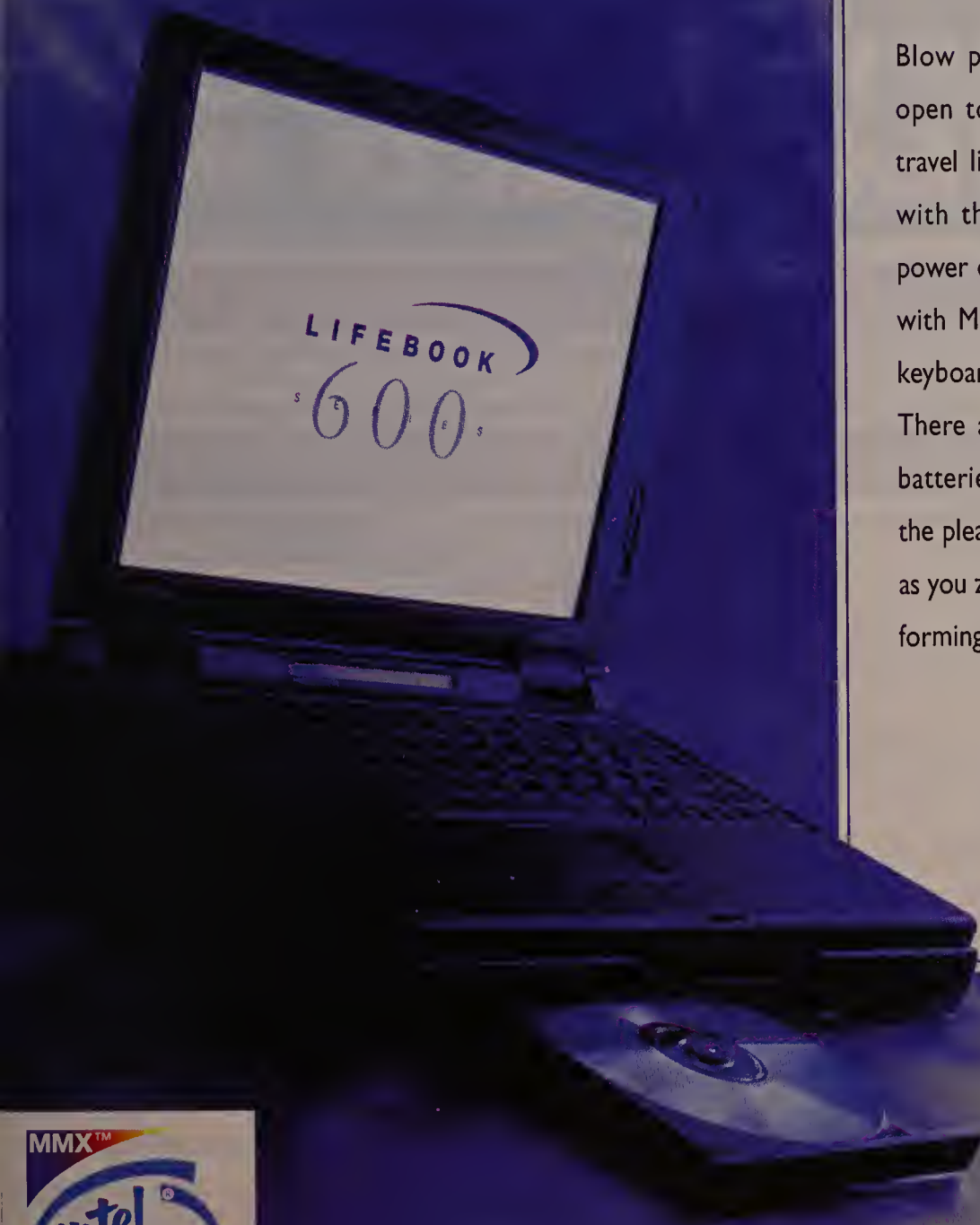
The Net provides Rent.Net with another edge over printed housing guides—content decisions are made and implemented the same day. "There are no barriers on the Internet like there are in print," says Katz. ■

**COMPANY:** Rent.Net
**SELLS:** Rental listings and relocation services
**EMPLOYEES:** 45
**DESIGNED OWN SITE?** no
**MONTHLY COST:** "tens of thousands of dollars"



Jed Katz and Phil Marcus

1-888-4-ON-THE-GO, ext. GA12, visit www.fujitsu-pc.com or get a QuikFacts fax @ 1-800-936-5209.




THE LIFEBOOK™

600

*The first-day-of-spring, not-a-care-in-the-world,*

# HIT-THE-ROAD, CONVERTIBLE OF NOTEBOOKS.

Blow past everybody. With a 4.4lb. notebook that's open to anything. Revel in the options. The ability to travel light. The freedom to have full desktop capability with the snap-in Enhancement Unit. Experience the power of a 150MHz or 133MHz Intel Pentium® processor with MMX™ technology. The control of a "no learning" keyboard. The clarity of a 12.1" active-matrix windshield. There are no worries here–hot-swappable Lithium ion batteries and a built-in 33.6 modem see to that. Only the pleasure that comes from seeing startled faces look up as you zip by. Their eyes full of envy, their lips unconsciously forming one word: *cool.* Drive on.

FUJITSU

FUJITSU PC CORPORATION

Built *for* Humans.

MMX™ intel inside pentium® PROCESSOR

LifeBook, Fujitsu and the Fujitsu logo are trademarks of Fujitsu Ltd. Intel and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation. All other trademarks are property of their respective companies. © 1997 Fujitsu PC Corporation. All rights reserved.

Designed for Microsoft® Windows® 95

Circle 103 on reader service card

## DELL DIMENSION DESKTOPS FOR BUSINESS

**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ Microsoft® Office 97 Small Business Edition ◆ MS® Windows® 95 ◆ MS Mouse (MS IntelliMouse on XPS System) ◆ 3 Year Limited Warranty† with 1 Year On-site^Δ Service **Upgrades:** ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $109. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ HP LaserJet 6Pse Printer, $799. ◆ 3-Pak of Zip 100MB Cartridges, add $39.

### *NEW* DELL DIMENSION® XPS H266
266MHz PENTIUM® II PROCESSOR

Common features listed above plus:
- 64MB EDO Memory with ECC
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron® Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Integrated Yamaha 16-Bit Sound
- Altec ACS-290 Speakers w/Subwoofer
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$3599**

Business Lease◊: $130/Mo.
Order Code #500609

### *NEW* DELL DIMENSION XPS H266
266MHz PENTIUM II PROCESSOR

Common features listed above plus:
- 32MB EDO Memory
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Integrated Yamaha 16-Bit Sound
- Altec ACS-90 Speakers
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$2999**

Business Lease: $111/Mo.
Order Code #500608

### *NEW* DELL DIMENSION XPS M233s
233MHz PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

★ *Upgrade to 64MB SDRAM, add $239.*

**$2499**

Business Lease: $92/Mo.
Order Code #500607

### DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:
- 32MB SDRAM Memory
- 3.2GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- 16X Variable EIDE CD-ROM Drive
- AWE32 Wavetable Upgrade Card
- Altec ACS-90 Speakers

★ *Upgrade to a 4.3GB Hard Drive (9.5ms), add $60.*

★ *Upgrade to a 1000LS Monitor (15.9" v.i.s.), add $119.*

**$2199**

Business Lease: $81/Mo.
Order Code #500606

# THEIR PERFORMANC
# EVEN SQUEEZE MORE

## DELL DIMENSION DESKTOPS FOR HOME

**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ 56K Capable* U.S. Robotics x2 Telephony Modem ◆ MS Home Essentials ◆ MS Windows 95 ◆ MS Mouse (MS IntelliMouse on XPS Systems) ◆ 3 Year Limited Warranty with 1 Year On-site Service
**Upgrades:** ◆ HP DeskJet 820Cse Color Printer, add $299. ◆ Iomega Zip 100MB IDE Internal Drive w/ One Cartridge, add $99. ◆ 3 yrs. On-site Service, add $99.

### *NEW* DELL DIMENSION XPS H266
266MHz PENTIUM II PROCESSOR

Common features listed above plus:
- 64MB EDO Memory with ECC
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron Monitor (15.9" v.i.s.)
- *NEW* Matrox Millennium II 8MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Yamaha 32 Wavetable Sound
- Altec ACS-490 Full Dolby® Surround Sound Speakers with Subwoofer
- Iomega Zip 100MB IDE Internal Drive with One Cartridge

**$3899**

Order Code #500604

### *NEW* DELL DIMENSION XPS M233s
233MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 32MB SDRAM Memory
- *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)
- 1000HS Trinitron Monitor (15.9" v.i.s.)
- Matrox Millennium 4MB WRAM Video Card
- *NEW* 24X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-290 Speakers with Subwoofer

★ *Upgrade to 64MB SDRAM, add $239.*

**$2999**

Order Code #500603

### DELL DIMENSION XPS M200s
200MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 32MB SDRAM Memory
- 4.3GB Hard Drive (9.5ms)
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- *NEW* 4MB EDO ViRGE 3D Video Card
- 16X Variable EIDE CD-ROM Drive
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers

★ *Upgrade to a 6.4GB Hard Drive with 512KB Cache (9.5ms), add $75.*

★ *Upgrade to Altec ACS-290 Speakers with Subwoofer, add $75.*

**$2399**

Order Code #500602

### DELL DIMENSION M166a
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 16MB SDRAM Memory
- 2.1GB Hard Drive (12ms)
- 800HS Trinitron Monitor (13.7" v.i.s., .26dp)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive
- Sound Blaster 16 PnP Sound Card
- Altec ACS-90 Speakers

★ *Upgrade to 32MB SDRAM, add $119.*

★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*

**$1899**

Order Code #500601

**Thousands of other custom configurations**

‡Non-discountable promotional pricing. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ΔOn-site service provided by an independent third-party provider. May not be available in certain remote areas. x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ★Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

**GET FREE DELL NEWS, RIGHT AT YOUR DESKTOP!**
**With DirectNews, Dell's free priority email bulletin, you can get pricing, product announcements, and limited time offers emailed direct to your computer, as soon as they become available. This money and time saving bulletin is available exclusively by subscription. And it's easy to subscribe. Just email us at listserver@dell.com with the message "join ddn" And then watch your mailbox for the inside scoop on Dell's latest offers.**

**DELL DIMENSION M166a**
166MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:
- 16MB SDRAM Memory
- 2.1GB Hard Drive (12ms)
- 15LS Monitor (13.7" v.i.s.)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive

★ *Upgrade to 32MB SDRAM, add $119.*
★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*
★ *Upgrade to an 800HS Trinitron Monitor (13.7" v.i.s., .26dp), add $49.*

**$1699**
Business Lease: $63/Mo.
Order Code #500605

## DESKTOP SOFTWARE DESCRIPTIONS

**MS Office 97 Small Business Edition (SBE) includes:**
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

Plus your choice of Bookshelf or Encarta

**MS Home Essentials includes:**
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0

## *NEW* DELL POWEREDGE SERVERS

**Common features:** ◆ 512KB L2 Cache ◆ Integrated Ultra-Wide SCSI-3 Controller ◆ Intel® EtherExpress™ Pro/100 NIC ◆ Intel LANDesk® Server Manager v2.5x ◆ Dell Server Assistant CD ◆ 3 Year Limited Warranty†

**DELL® POWEREDGE® 2200 SERVER**
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 96MB ECC EDO Memory
- 4GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- MS Windows NT® Server 4.0

★ *Upgrade to a 9GB Ultra-Wide SCSI-3 Hard Drive, add $450.*
★ *Upgrade to 128MB ECC EDO Memory, add $220.*

**$4999**
Business Lease: $179/Mo.
Order Code #250072

**DELL POWEREDGE 2200 SERVER**
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory
- 2GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- 3Com OfficeConnect Hub 8/TPC

★ *Upgrade to 64MB Memory, add $239.*
★ *Upgrade to a 4GB Ultra-Wide SCSI-3 Hard Drive, add $320.*
★ *4/8GB SCSI DAT Tape Backup, add $749.*

**$3249**
Business Lease: $119/Mo.
Order Code #250070

# S SO STRONG, IT'LL
# ROM YOUR DOLLAR.

## DELL LATITUDE NOTEBOOKS

**Common features:** ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts 12X Variable CD-ROM, 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with *NEW* 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

**NEW DELL LATITUDE® LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB RAM (72MB Max.)
- 2.1GB Hard Drive
- 2nd Lithium Ion Battery
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB RAM, add $299.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *3Com LAN+ 33.6 Modem PC Card, add $349.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Leather Carrying Case, add $129.*

**$3999‡**
Business Lease: $144/Mo.
Order Code #800130

**NEW DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 24MB RAM (72MB Max.)
- 2.1GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $199.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Leather Carrying Case, add $129.*
★ *3Com 10Base-T Network Card, add $139.*
★ *Dell Latitude LM Port Replicator, add $159.*

**$3599‡**
Business Lease: $130/Mo.
Order Code #800132

**NEW DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Nylon Carrying Case, add $69.*

**$3299‡**
Business Lease: $122/Mo.
Order Code #800140

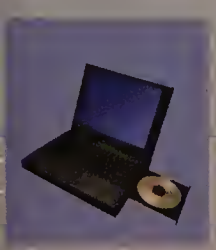
**DELL LATITUDE LM P133ST**
133MHz PENTIUM® PROCESSOR

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive

★ *Upgrade to 24MB RAM, add $100.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Nylon Carrying Case, add $69.*
★ *3Com 10Base-T Network Card, add $139.*

**$2799‡**
Business Lease: $104/Mo.
Order Code #800138

**available. What can we build yours to do?**



TO ORDER TOLL-FREE
**800-433-2782**
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada, call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03269

QUALCOMM

# PLENTY OF PEOPLE HAVE SMALL PHONES. BUT THAT DOESN'T MEAN THEY HAVE THE MOST ADVANCED TECHNOLOGY.

If her lips could actually move, even she would tell you that wireless phones are getting smaller, but not necessarily better. That's about to change. QUALCOMM, the developer of CDMA digital technology, has created the Q phone. Now you can get crystal clear calls, no cross-talk and the best security available, all in a palm-size digital PCS phone. By comparison, everything else will seem like, well, toys. For a closer look, contact us at www.qualcomm.com/cdma or 1-800-349-4188.

©1997 QUALCOMM The stylized Q logo is a trademark of QUALCOMM Incorporated. Doll shown is a product of Fashion Corner® 1997 Lucky Toys (USA), Inc. (206) 883-8104

Circle 146 on reader service card

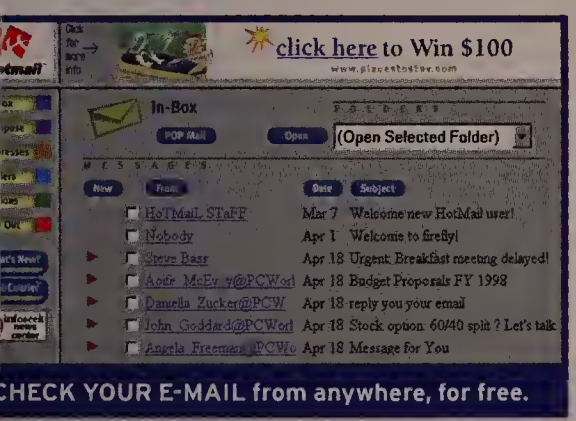
# Hot Picks for the Home Office

## These are a few of our favorite things.

BY STEVE BASS

### READ IT WHILE IT'S HOT

AS SOON AS this article's finished, I'm going on vacation—without a computer. But I'll still be able to check my e-mail from anywhere in the world—even an Internet café in Topeka. All I'll need is access to a PC with an Internet connection, a Web browser, and an account with Hotmail, a free Web-based e-mail service. I surf over to www.hotmail.com, type in my password, and I'm ready to send and receive messages. I can attach image files or text documents to the messages, send copies to "blind" and "cc" recipients, and




create a permanent address book. Hotmail also checks for e-mail sent to accounts with other ISPs, so no matter how far out I go, I'm never out of touch. **Hotmail** free; 408/222-7000; www.hotmail.com

READER SERVICE NO. 645

### EVERYTHING BUT THE KITCHEN SINK

IT'S A COLOR PRINTER. Hold on—no, it's a fax machine. Wait a minute—there's also a scanner with optical character recognition. And would you believe you can use it as a copier?

Hewlett-Packard's OfficeJet 570 combines all four devices into one 17-by-15-by-10-inch package. The OfficeJet 570 prints at 600 dots per inch in black and white and 300 dpi in color, cranking out monochrome documents at about 4 pages per minute and sharp color pages at 1 ppm. A 65-page fax memory lets you leave the office without worry while the faxes pile up; the 300-dpi black-and-white scanner comes with OmniPage Limited Edition software for turning scanned pages into editable text. Copying capabilities are nothing to write home about, but the other features make the OfficeJet a bargain. Okay, so it ▶

OfficeJet 570

You're cordially invited to try the "Hoity-Toity, Four Star, Invitation Only, Black Tie Affair" of address labels.

Ms. Judy Franklin
2352 Oakwood Drive
Bel Air, CA 35066

Avery® Clear Labels (Laser 5660™/Ink Jet 8660™)

Sorry if we sound snobbish. But if you want sophisticated labels that make a great impression, you've found them. Avery® clear labels virtually disappear on any envelope and work with laser or ink jet printers. And since preset layouts already exist in Microsoft® Word, WordPerfect® and LabelPro®, you'll avoid ugly formatting problems. Oh, we almost forgot. Pick a stamp that doesn't clash.

AVERY®
How will you use us today?™
1-800-477-4404 ✪ 287
www.avery.com

# A flight of the imagination.

# Complete with landing gear.

*Packed with cutting-edge technology, the new Tecra™ 510CDT has the power to make your ideas fly. Tackle any of today's complex software applications with a powerful 133MHz Pentium® processor, 16MB of high-speed EDO memory and a massive hard drive up to 2.1 billion bytes. There's also 16-bit stereo sound, a 10X* CD-ROM drive and full-motion video capability to enhance any multimedia presentation. Top it all off with the expansion capabilities of the Desk Station V Plus, and you've got a notebook that will take you to new heights. For more information visit the Toshiba Web site at http://computers.toshiba.com, or for a dealer near you, call 1-800-457-7777.*

intel inside pentium™ PROCESSOR

In Touch with Tomorrow
**TOSHIBA**

**TECRA 510CDT**
- 133MHz (2.9v) Pentium processor
- 12.1" dia. color active-matrix display
- 2.1 billion byte (=2.02GB) removable HDD
- 10X* CD-ROM
- Optional SelectBay™ battery pack

**TECRA 500CDT AND 500CS**
- 120MHz (2.9v) Pentium processor
- 12.1" dia. color display in your choice of active-matrix (CDT) or DSTN dual-scan (CS)
- 1.3 billion byte (=1.26GB) removable HDD
- 6X CD-ROM on CDT (optional on CS)

**ALL MODELS**
- 256KB L2 cache
- PCI system-bus architecture
- 16MB of EDO DRAM expandable to 144MB
- SelectBay supports 3.5" floppy drive, CD-ROM or optional second hard drive
- HiOVideo™ PCI graphics controller, 2MB video memory
- 800 x 600 resolution
- 16-bit Sound Blaster® Pro compatible system with stereo speakers and microphone
- Supports two Type II or one Type III 16-bit PC Cards, ZV Cards or 32-bit CardBus Cards
- FIR (Fast Infrared) compliant front and back ports
- 3-year limited warranty
- Toll-free technical support - 7 days a week, 24 hours a day

**SUPERIOR 133MHz PRODUCTIVITY**
Offering a 133MHz Pentium processor, PCI architecture and an enormous 2GB hard drive, this is a powerful tool.

**STUNNING 12.1" DISPLAY**
Combine a brilliant 12.1", 800 x 600 display with Zoomed Video technology for sensational presentations.

**FLEXIBLE CONFIGURATION**
The SelectBay lets you tailor your computer to meet changing needs in seconds.

**BUILT-IN 28.8Kbps MODEM**
With a voice/fax modem you can stay in touch with the world quickly and efficiently. Other features include a speakerphone and answering machine.

**POWERFUL DOCKING**
The optional Desk Station V Plus provides instant connection to your desktop setup and includes stereo speakers, a SelectBay as well as slots for PC Cards, PCI and ISA cards.

Designed for Microsoft® Windows® 95

©1997 Toshiba America Information Systems, Inc. All specifications and availability are subject to change. *10X average speed. All products indicated by trademark symbols are trademarked and/or registered by their respective companies. Intel Inside and Pentium Processor Logos are trademarks of Intel Corporation.

**Circle 233 on reader service card**

P-Touch Home & Hobby II

won't heat up my danish, but it's convenient and fits snugly into a corner of my already crowded office. **OfficeJet 570** $499 list; Hewlett-Packard; 800/752-0900, www.hp.com.

READER SERVICE NO. 646

## LICKETY-SPLIT LABELS

PICTURE THIS: You need a quick label to stick on a storage shelf. Or maybe to identify a piece of equipment as yours (especially if your spouse keeps trying to claim it). Instead of firing up the computer, try using Brother's P-Touch Home & Hobby II, a clever little label maker. I just type the characters into a miniature keypad and voilà—out pops a label. In no time I found dozens of places to attach labels, from each of the dozen cables snaking from my computer to a modem switching box. The P-Touch handles labels in four sizes, prints up to two lines, and uses both 3/8-inch and 1/2-inch tape. It has a small footprint of about 4 by 6 by 2 inches, and uses six AA batteries. Essential? No. Handy? Absolutely. **P-Touch Home & Hobby II** $50 street; Brother; 888/879-3232, 714/859-9700; www.brother.com/us-label/lineup-us.html.

READER SERVICE NO. 647

## PICK A CARD, ANY CARD

LAST MONTH I had a great idea on how to increase membership in my local PC user group: Hang out at computer trade shows and pass out my business cards with "free admission" printed on the flip side. Instead of giving the job to a local quick print shop, I saved a little money by designing and printing the cards myself with My Professional Business Cards. In less than 20 minutes, I had a stack of sharp-looking business cards ready to go. The program runs on Windows 3.*x* and Windows 95, and includes 95 predesigned business card templates for the artistically impaired, more than 1000 graphic images (or you can use your own—it imports a dozen graphics formats), and enough fancy card stock for 300 business cards. Now, isn't it time *you* cooked up some new business cards? **My Professional Business Cards** $29 street; MySoftware Company; 800/325-3508, 415/473-3600; www.mysoftware.com/.

READER SERVICE NO. 648

## BUSINESS SMARTS

HERE'S A CARDINAL business rule: You can't get where you want to be if you don't know where you're going. A solid business plan is not only essential when you're starting out, it's also a useful refresher for an existing business. The Smart Business Plan CD-ROM guides you through plan development, handling topics such as market analysis, product and service descriptions, marketing objectives, financing, and cost control—with examples and instructions for businesses from service and manufacturing to wholesale and retail. A text editor and spreadsheet are built in, but what makes Smart Business Plan easy to use is the split screen that lets you view sample plans while writing your own. The program runs on Windows 3.*x* or Win 95. **Smart** ▶

Don't make a "My new cards aren't ready... hand me your cocktail napkin." first impression.

DeeAnn Wood
Regional Manager
D.P. International
6025 W. Main Street
Bart, Illinois 50609
PH (818) 555-1610
FAX (818) 555-1616
Avery® Business Cards (Ink Jet 8377™/Laser 5377™)

A networking guru like you, wait on a print shop? Ha! Now you can create Avery® business cards instantly on your laser or ink jet printer, which is great for customized designs in any quantity. And it's simple, thanks to preset layouts in Microsoft® Word, WordPerfect® and LabelPro®. Knowing this, wouldn't you rather just leave the napkins with the caterers?

AVERY®
How will you use us today?™
1-800-477-4404 ⊗ 287
www.avery.com

*You have what it takes to make your*

*small business into whatever you want*

accomplish more

*it to be. We can help you in ways you*

*never thought of. From accounting*

*services to lines of credit to corporate*

*cards, American Express is here for you.*

do more®

AMERICAN EXPRESS

Small Business Services

Call 1-800-SUCCESS or visit www.americanexpress.com
American Express employs licensed CPAs. American Express Company is a publicly owned company and is not a licensed CPA firm.

1996 American Express Travel Related Services Company, Inc.

Multi-Media Drawer

**Business Plan** $100 street; American Institute for Financial Research; 800/791-1000, 919/468-2700; www.smartonline.com/.

READER SERVICE NO.649

## CLEAR OFF YOUR DESK

POP QUIZ: What stacks up on your desk quicker than magazine subscription cards? That's right—floppy disks and CD-ROMs. End the litter with a Multi-Media Drawer, a well-designed, lockable storage cabinet. The sturdy drawer can hold up to 48 CD-ROMs, 300 3.5-inch disks, or other items including 4mm or 8mm cassette tapes and Zip cartridges. Unlike other storage drawers I've tried, this one lets me extend the drawer far enough to get to *all* the CD-ROMs. The unit stands 7 inches high and about 15 inches square, perfect for tucking under my desk and out of the way. And if you need more storage, no problem—just stack additional drawers on top of one another. **Multi-Media Drawer** $100 street; Multiform Products; 800/382-8113; 904/737-1166; www.mfatl.com.

READER SERVICE NO. 650

## TURN RIGHT ONTO THE WORLD WIDE WEB

PLANNING AN important business meeting over a pastrami sandwich? Impress your clients by supplying them a detailed map to Jerry's Deli, along with driving directions. The best part is that you won't have to spend a dime for the software. All you need is an Internet connection and a browser; MapBlast does the rest. Just log on to MapBlast's Web page, fill in the location's address, and watch the map appear. Creating a detailed road map is equally easy: Just enter your starting point and destination point. And don't bother printing and mailing the map—simply type in your client's e-mail address and MapBlast sends the the URL via e-mail, letting the other person grab their own copy. **MapBlast** free; www. mapblast.com/.

READER SERVICE NO. 651

## PASS THE REMOTE

WANT TO KEEP track of the news while you're at work? How about your favorite soaps? You can with ATI-TV, a cool add-in card that transforms your computer into a TV set. Besides turning you into a desk potato, the ATI-TV doubles as a video capture card, making it ideal for grabbing images or movie clips from TV. Even better, if you have teleconferencing software you can connect a video camera to the ATI-TV card and use it for Internet videoconferencing. The card uses signals from cable TV or an antenna, and connects to an ATI video card or a card with a proprietary ATI Multimedia Channel connector. You can view thumbnails of several channels at once, then click on one for a full screen. You can even tell the ATI-TV to look for specific words in a channel's closed captioning and begin transcribing the data to disk. Okay, so watching *General Hospital* won't make my deadlines disappear, but it sure made writing this more fun. **ATI-TV** $99 street; ATI Technologies; 905/882-2600; www.atitech.ca.

READER SERVICE NO. 652

*Steve Bass is a* PC World *contributing editor.*

**For more information on all products in this article, circle reader service no. 905.** ■

# QUICK, WHAT'S THE ONE BRAND OF PAPER FOR ALL YOUR NEEDS?

## HERE'S A HINT.

OK, here's another hint, it's great and it's white. Son of a gun you guessed it. It's Great White® Recycled Content Paper from Union Camp.

What's so great about Great White? Just about everything. Great White performs as well as virgin paper. And when you use it, you won't have to worry about paper jams. So it's as good for your needs as it is for the environment.

Great White is the simple choice for all your paper needs. We've got multi-purpose paper for general use. There's uncoated and coated inkjet paper for sharp black & white graphics and bright, vibrant color reproduction. And laser paper for crisper laser images.

After all this, what's the one paper for all your needs? If the answer was any more obvious, it would bite you.

Union Camp

For information on where to purchase Great White paper products, call toll-free 1-888-GR8-WHITE.

GREAT WHITE

Recycled Content Paper

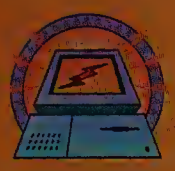
ONE LESS THING TO WORRY ABOUT™

Circle 237 on reader service card

PC WORLD

# TOP 100


208 Power Desktops



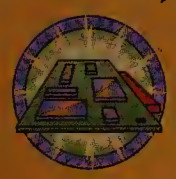
224 Budget Desktops

232 Notebooks

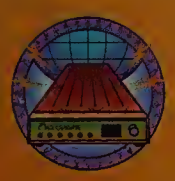
247 Printers

251 Monitors

255 Graphics Boards



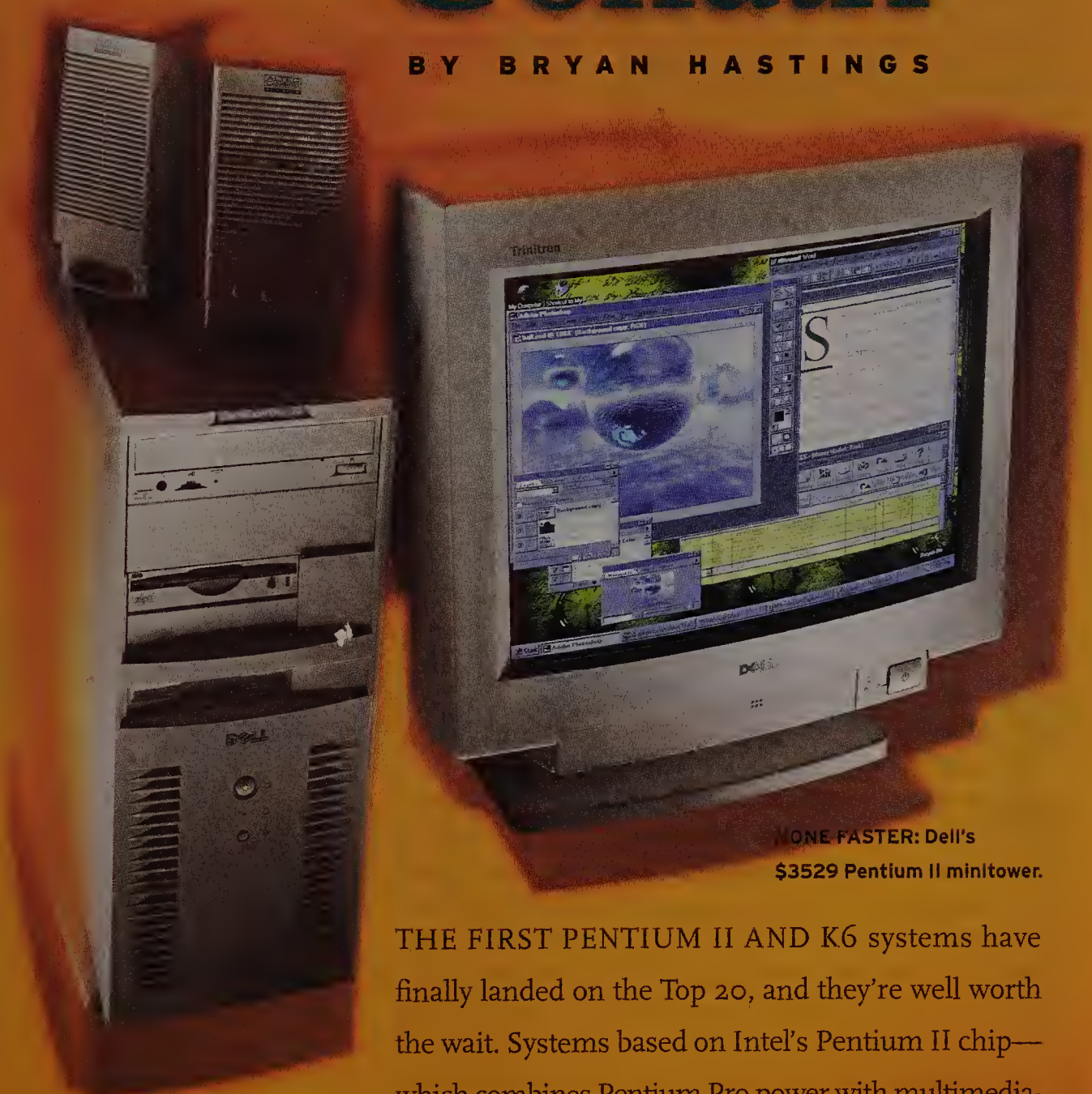
257 Modems




## Pentium II and K6:

# Goliath vs. Goliath

BY BRYAN HASTINGS

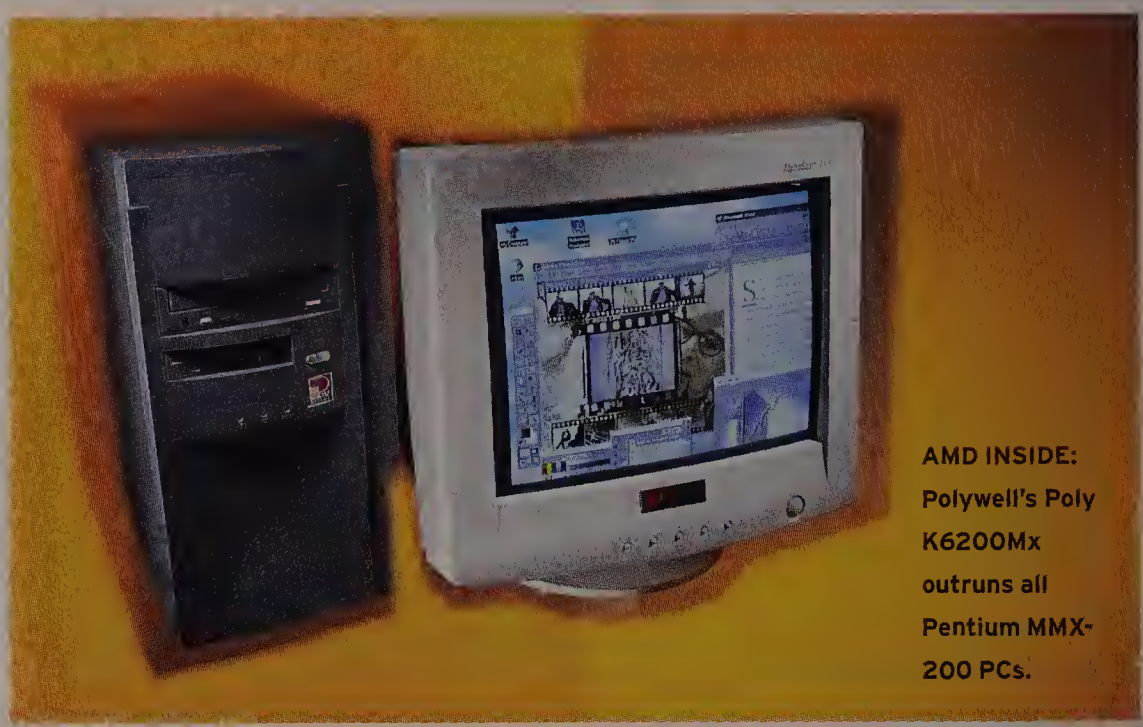



ONE FASTER: Dell's $3529 Pentium II minitower.

THE FIRST PENTIUM II AND K6 systems have finally landed on the Top 20, and they're well worth the wait. Systems based on Intel's Pentium II chip—which combines Pentium Pro power with multimedia-enhancing MMX technology—will lead the next ▶

wave in top-end desktop PCs. And those based on Advanced Micro Devices' K6 processor are powerhouses with great appeal to cost-conscious shoppers.

The four Pentium II systems we tested offer unmatched speed and excellent value. All placed on the Top 20 Power Desktops chart, with Dell's Dimension XPS H266 hitting the top spot. The K6 also made an impressive debut. We tested the Polywell Poly K6200Mx, a $2569 minitower based on the 200-MHz version of AMD's latest chip, and it edged onto the power chart in 20th place. It was about 10 percent slower than 266-MHz Pentium II PCs, but its PC WorldBench score of 241 is still excellent. The Poly K6200Mx is a powerful system for the small or home office—it lacks only speakers.



**AMD INSIDE:** Polywell's Poly K6200Mx outruns all Pentium MMX-200 PCs.

### PENTIUM II: THE CHIP TO BEAT

CALLING A PENTIUM II "fast" is like saying Bill Clinton received tips for his White House coffee councils. The four 266-MHz units we tested turned up PC WorldBench scores from 259 to 263, about 15 percent faster than the average Pentium Pro and Pentium MMX-200 systems we've tested. To get a feel for how far PC performance has advanced in the past two years, we did an informal speed comparison between the Pentium IIs and a Dell Dimension Pentium-75 minitower. Even with all systems loaded with 32MB of RAM, it was like staging a duel between Doc Holliday and Elmer Fudd. The Pentium IIs launched Microsoft Excel faster than the P-75 could switch to an *already running* session of the spreadsheet. Then we tried opening the giant, formula-choked Excel workbook that we use to rate Top 20 desktops. It took the P-75 almost a minute to open the 6MB file; the Pentium IIs did it in about 5 seconds. Even faster 300-MHz Pentium II systems should be available before the end of the year.

As we expected, all the Pentium IIs

# YOUR GUIDE TO THE TOP 100

QUESTIONS ABOUT OUR CHARTS? The following section should answer most of them. If not, ask us; see page 14 for contact information.

**How do the charts work?** The Top 20 and Top 10 charts are evolving lists of the best PCs, monitors, modems, printers, and graphics boards we've tested. The Top 20 charts are divided by price. Power desktops cost $2500 or more; power notebooks cost $2750 or more. Every month we test the latest products in each category and compare them to the pool of items we've already reviewed. As new products earn places on the charts, those at the bottom drop off. Price cuts also cause chart changes.

**Where do you get your prices?** We estimate street prices based on vendor information and our own research, including surveys of retail outlets. We recheck all prices every month.

**What does the overall rating mean?** It's the sum of all our tests—both hands-on evaluations and automated speed tests. The scale is 1 to 100, so a product that scores in the 90s is generally considered exceptional, one in the 80s is among the best, one in the 70s is above average, and one that scores lower usually doesn't place.

**What does the PC WorldBench score mean?** It's a measure of how fast a PC is in relation to our baseline machine, a Dell P75t configured with 8MB of RAM, a 540MB hard drive, and no secondary cache. A PC that scores 200, for instance, is twice as fast as the baseline unit.

**Where do the scores for reliability, support quality, and support policies come from?** The reliability and support quality scores come from readers who respond to the Reliability and Service fax-back survey in each issue of *PC World*. The policies score is based on the vendor's support policies (such as length of warranty and support hours).

**What do all those word scores mean?** Word scores for performance and price are based on a product's rating in relation to other products in its category. For example, a budget PC that is rated "expensive" is high priced only in relation to other budget PCs. Likewise, a power notebook rated "good" for performance is good only in relation to other power notebooks. Word scores for other categories, such as features, are relative to all desktops or all notebooks.

**Where can I find the online version of the Top 100?** Go to PC World Online (www.pcworld.com). There you'll find not only the current issue of *PC World* and reviews for the last 18 months, but some extra features you'll want to check out. For one thing, PC World Online includes reviews you won't find in print. If a product misses a chart and we don't cover it here, you can go directly to an online review by using the URL provided in each Top 100 section.

**Have you ever wished you could build your own chart based on your buying criteria?** You can, with Buyer's Guide, our Web site's unique chart customizer. Buyer's Guide combines your criteria with *PC World*'s current data and test results to generate customized Top 20s and Top 10s. For instance, if you want your chart to rank notebooks that have 120-MHz processors and 1.6GB hard drives, the guide's Personal Adviser will find and rank all the machines that fit your specifications.

came heavily loaded and cost plenty—ranging from $2899 for Quantex's QP6/266 SM-4 to $4369 for Sys Technology's Performance Pro 266. All are designed as small- or home-office systems, but Dell's $3529 Dimension XPS H266 and the $3239 Gateway 2000 G6-266 M are the best values of the four Pentium IIs we reviewed. Both offer excellent multimedia features, huge 6.4GB hard disks, Iomega Zip drives, voice-enabled modems, and sizable software bundles including Microsoft Office Small Business Edition. Quantex's QP6/266 SM-4 is the lowest-cost Pentium II reviewed here. The Quantex minitower is less loaded than the Dell or Gateway 2000 Pentium II PCs and has only a fair reliability rating, but it's still nicely configured, and its price is terrific.

### AMD'S K6-200: MMX KILLER?

THE K6 PROCESSOR should be a hot competitor to the Pentium II. We tested a Polywell Poly minitower with a 233-MHz version of the K6 chip that AMD sent us, and it scored 248 on the WorldBench retest, placing only 5 percent slower than the average of the four Pentium II systems tested this month. If the 233-MHz Poly had the same configuration as the Poly K6200Mx we review this month (a 200-MHz K6 system), it would sell for about $2700. We expect that PCs based on 266-MHz and faster versions of the AMD chip will run an even tighter race with Intel's cutting-edge CPU.

Meanwhile, a K6-200–versus–Pentium MMX battle is brewing for the minds and wallets of budget PC shoppers. At $2569, the Polywell Poly K6200Mx nearly made our Budget Desktops chart, yet it outpaced the fastest Pentium MMX-200 PCs we've tested. Similarly configured Pentium MMX-200 and Pentium Pro-200 power systems are often less of a bargain—they typically sell for about $2900 and average 230 on our benchmark. But Intel Pentium MMX–based desktops should be significantly cheaper by the time you read this. In May, Intel slashed the price of the Pentium MMX-200 processor by 38 percent.

Pentium II and K6 PCs are the big news in power desktops, but we saw several other notable changes. Quantex's reliability rating rose from poor to fair, moving its QP6/200 SM-4 up toward the middle of the chart. IBM's reliability score slid from good to fair, which helped to push the company's PC 350 Pentium MMX-200 and PC 365 models off the chart.

### MORE BUDGET MMX DESKTOPS

FIVE OF THE TOP 20 budget systems this month are based on the Pentium MMX chip, including Dell's new Dimension XPS M166s, our top budget Best Buy. The MMX-166 has become the entry-level desktop processor for Dell and Quantex, and both companies have announced plans to phase out all desktop systems based on non-MMX Pentium CPUs.

Among notebooks, Compaq's Armada 1130T plummeted $600 in price to $1399, making this P-120 the top budget portable Best Buy and the cheapest notebook PC with an active-matrix display.

Acer purchased Texas Instruments' mobile-computer division this spring, adding TI's Extensa line to its portable PC offerings and replacing its own Nuovo series with the TravelMate line. No Extensa or TravelMate models are on either Notebooks chart, but the AcerNote Light 382, which is new this month, placed eighth among budget notebooks.

**THAT'S OKI: The $999 OkiPage 16n printer.**

## Desktop Performance Triples

AVERAGE DESKTOP speeds have soared since our March 1996 roundup, when we started using the PC WorldBench test suite. For standard business applications, the Pentium II-266 is over two and a half times as powerful as a Pentium-75. The difference is even greater with software that takes advantage of MMX, such as many multimedia applications.

| CPU | Average PC WorldBench score |
|---|---|
| Intel Pentium-75 | 99 |
| Intel Pentium-100 | 154 |
| Intel Pentium-133 | 178 |
| Intel Pentium-166 | 196 |
| Cyrix Cx6x86-P166+ | 203 |
| Intel Pentium-200 | 210 |
| Intel Pentium MMX-200 | 229 |
| Intel Pentium Pro-200 | 229 |
| AMD K6-PR200[1] | 241 |
| Intel Pentium II-266[2] | 262 |

[1] Based on one system, the Polywell K6200Mx, tested this month.
[2] Based on four Pentium II systems, all tested this month.

### PRINTER PRICES DROP

IF YOU NEED A PRINTER for a department or small office, check out the Top 10 Workgroup Printers. At $999, the monochrome Okidata OkiPage 16n is the first sub-$1000 printer on the chart, and HP slashed the price of its Color LaserJet 5M by $2196 to a more palatable $5199.

*Bryan Hastings is a* PC World *senior associate editor. Assistant Editor Grace Aquino, Editorial Researcher Julie Campagna, Staff Editors John Goddard and Eric Hellweg, Editorial Assistant Mick Lockey, Associate Editors Melissa Riofrio and JoAnne Robb, and freelance writers Jon Jacobi, Dan Littman, Jim Martin, and Kirk Steers contributed to the Top 100. Testing by Ulrike Diehlmann, Robert James, Elliott Kirschling, Jeffrey Kuta, Mike Salayko, and Susan Silvius.* *See page 14 for contact information.*

PC WORLD

# TOP 20 POWER DESKTOPS

| | SYSTEMS | Last month | Month tested | Street price (4/15/97) | CPU | Comments |
|---|---|---|---|---|---|---|
| 1 | Dell Dimension XPS H266<br>800/388-8542 www.dell.com | – | NEW | $3529 | Pentium II-266 | Killer speed, giant hard drive, great multimedia, top reliability rating. |
| 2 | Dell Dimension XPS M200s<br>800/388-8542 www.dell.com | 1 | Mar 97 | $2579 | Pentium MMX-200 | $120 price drop on high-end MMX; outperforms Pentium Pro sibling. |
| 3 | Dell Dimension XPS Pro200n<br>800/388-8542 www.dell.com | 2 | Jan 97 | $2779 | Pentium Pro-200 | Fast, feature-packed; $220 cut this month; easy to upgrade. |
| 4 | Dell OptiPlex GXi 200M<br>800/388-8542 www.dell.com | 3 | June 97 | $3255 | Pentium MMX-200 | Do-it-all corporate desktop with ethernet, multimedia, voice modem. |
| 5 | Micron Millennia Pro2 200 B<br>888/634-8799 www.micronpc.com | 4 | Feb 97 | $2738 | Pentium Pro-200 | Fast, thoroughly loaded; down $221 this month. |
| 6 | Gateway 2000 G6-266 M<br>800/846-2000 www.gw2K.com | – | NEW | $3109 | Pentium II-266 | Tied for fastest with number one Dell; great speakers, 56-kbps modem. |
| 7 | Gateway 2000 G6-200<br>800/846-2000 www.gw2K.com | 5 | Dec 96 | $2549 | Pentium Pro-200 | $140 drop on fast SCSI-equipped workgroup server candidate. |
| 8 | Dell OptiPlex GX Pro 200<br>800/388-8542 www.dell.com | – | retested | $3246 | Pentium Pro-200 | Reviewed in May, now has updated BIOS, faster modem, costs over $1000 less. |
| 9 | Quantex QP6/266 SM-4<br>800/896-4898 www.quantex.com | – | NEW | $2899 | Pentium II-266 | Blazingly fast Pentium II comes with very sharp screen; pricey. |
| 10 | HP Vectra VA 6/200 MT<br>800/752-0900 www.hp.com | 7 | Mar 97 | $3183 | Pentium Pro-200 | Nice corporate PC has top reliability record, but support hours are limited. |
| 11 | HP Pavilion 7370V<br>800/724-6631 www.hp.com | 10 | May 97 | $3448 | Pentium MMX-200 | Good software bundle; pricey, only one year of free tech support. |
| 12 | Quantex QP6/200 SM-4<br>800/896-4898 www.quantex.com | 18 | May 97 | $2649 | Pentium Pro-200 | Very fast for the price; Quantex reliability rating moves from poor to fair. |
| 13 | Sys Technology Sys Performance P200T2M<br>800/613-9963 www.systechnology.com | – | NEW | $2657 | Pentium MMX-200 | Speedy low-cost minitower comes with sharp monitor; one-year warranty. |
| 14 | Netis N6200PCI<br>800/577-7526 www.netistech.com | 11 | Dec 96 | $2580 | Pentium Pro-200 | Fast tower can take two CPUs; Netis now offers support on the Web. |
| 15 | Sys Technology Performance Pro 200<br>800/613-9963 www.systechnology.com | 13 | Dec 96 | $2849 | Pentium Pro-200 | Superfast, good graphics card; otherwise fairly generic; $80 price drop. |
| 16 | Multiwave P-200 MMX<br>800/234-3358 www.mwave.com | 14 | June 97 | $2750 | Pentium MMX-200 | Very fast, good graphics; support policies could be better. |
| 17 | CLR Infinity P-200 MMX<br>800/611-1555 www.clrusa.com | 16 | Apr 97 | $2629 | Pentium MMX-200 | $94 price drop keeps fast minitower on chart; monitor only 15 inches. |
| 18 | Sys Technology Performance Pro 266<br>800/613-9963 www.systechnology.com | – | NEW | $4369 | Pentium II-266 | Only Dell, Gateway P-IIs above are faster; expensive, warranty just one year. |
| 19 | Acma zPower Pro-200<br>800/786-6888 www.acma.com | 19 | Jan 97 | $2695 | Pentium Pro-200 | Fast, good graphics board, but CD-ROM drive looks a little slow now. |
| 20 | Polywell Poly K6200Mx<br>800/999-1278 www.polywell.com | – | NEW | $2569 | AMD K6-PR200 | First K6 PC tested for Top 20. Great price, very fast, loaded; short tech hours. |

Best Buy See features chart, page 210; performance chart, page 214. Recommended as home system

[1] To order fax copies of system reviews, call 800/434-4495 from a touch-tone phone and use your credit card. You can order next month's reviews in advance: Power Desktops, Budget Desktops, or Notebook PCs Top 20 charts and capsule reviews ($9.95, available May 27).

PENTIUM II SYSTEMS MAKE A BIG SPLASH, with three of the four tested landing in the top half of the chart. Of the systems that didn't place, Toshiba's Infinia 7201 is the standout. It's hampered by a merely fair reliability rating, but this elegant MMX-200 desktop sets the pace for home systems. The Infinia comes with a huge software bundle and with TV and radio built in, plus very good multimedia and a fast modem, as well as extensive easy-to-follow documentation. It's also one of the few PCs with connectors that let you hook up a video source, such as a VCR, and display the video on the computer screen. For reviews of the Infinia and other systems, visit PC World Online (www.pcworld.com/t20pcsnaps).

## SCORECARD

| ★ Overall rating | PC WorldBench score/performance | Vendor's system reliability | Features and design | Price | Vendor's support quality/policies | Fax reprint number[1] | Reader service number |
|---|---|---|---|---|---|---|---|
| 95 | 263/outstanding | best | outstanding | average | best/best | – | 678 |
| 93 | 234/very good | best | very good | very inexpensive | best/best | 3494 | 679 |
| 92 | 230/very good | best | very good | inexpensive | best/best | 3474 | 680 |
| 90 | 226/very good | best | outstanding | average | best/best | 3534 | 681 |
| 88 | 231/very good | good | very good | inexpensive | best/best | 3489 | 682 |
| 87 | 263/outstanding | fair | good | average | best/best | – | 683 |
| 87 | 234/very good | fair | very good | very inexpensive | best/best | 3458 | 684 |
| 87 | 230/very good | best | good | average | best/best | – | 685 |
| 86 | 259/outstanding | fair | good | inexpensive | good/best | – | 686 |
| 86 | 229/very good | best | very good | average | good/poor | 2496 | 687 |
| 82 | 222/very good | best | good | average | good/fair | 3515 | 688 |
| 82 | 230/very good | fair | good | inexpensive | good/best | 3518 | 689 |
| 82 | 233/very good | [2] | very good | inexpensive | [2]/fair | – | 690 |
| 81 | 230/very good | [2] | very good | very inexpensive | [2]/fair | 3460 | 691 |
| 80 | 236/outstanding | [2] | very good | inexpensive | [2]/fair | 3459 | 692 |
| 80 | 235/outstanding | [2] | very good | inexpensive | [2]/fair | 3535 | 693 |
| 80 | 229/very good | [2] | very good | very inexpensive | [2]/good | 3536 | 694 |
| 79 | 262/outstanding | [2] | very good | very expensive | [2]/fair | – | 695 |
| 79 | 231/very good | [2] | very good | inexpensive | [2]/fair | 3515 | 696 |
| 78 | 241/outstanding | [2] | good | very inexpensive | [2]/good | – | 697 |
| Scorecard weightings ▶ | Performance 25 percent | Reliability 25 percent | Features 20 percent | Price 15 percent | Support 15 percent | All products: | 908 |

[2] Insufficient data.

# This Month's Best Buys

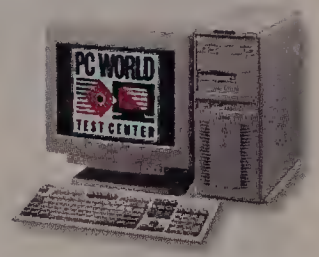
## 1 DELL DIMENSION XPS H266

**PRO:** Lightning fast, very good features, top-notch support policies and service and reliability

**CON:** None significant

If Dell's $3699 Dimension XPS H266 is any indication, the Pentium II processor deserves all the fanfare it's been getting. This terrific home-office system ran up a PC WorldBench score of 263, the best ever.

The Dimension XPS H266 is a very high-end machine in all respects. The H266's Matrox Millennium II card, a habitué of our monthly Top 10 Graphics Boards chart, is one of the first to have 8MB of video memory, great for 3-D. The 17-inch monitor produces exceptionally crisp and flicker-free images. The 12X CD-ROM drive, wavetable-equipped Yamaha sound board, and Altec Lansing ACS 90 satellite speakers and ACS2 90 subwoofer comprise a great multimedia setup. The speakers pack enough wallop that you could, in a pinch, use this minitower as a sound system for home parties.




Dell Dimension XPS H266

The H266 comes with a huge 6.4GB hard drive, plus all the communications components of a home office. Using the included voice-enabled U.S. Robotics 33.6-kbps modem (the Sportster is a Top 10 perennial), you can have the H266 take phone messages and receive faxes. The software bundle includes Microsoft Office Small Business Edition. It's also one of a few systems to sport an Iomega Zip drive, which accepts 100MB storage disks that are not much bigger than floppies.

Our biggest complaint is the documentation, which is split into separate booklets for the main system and each peripheral. While these manuals are excellent, they'd be more convenient to use if integrated into one package. Also, while you can hand-turn a large screw to remove the minitower's side panel, pulling the panel on and off takes some finagling.

Completing the picture is Dell's excellent service and reliability record. In the latest fax-back survey responses, *PC World* readers continue to report high satisfaction with Dell's PC reliability and with the support they get from the company. Dell backs its Dimension PCs with a three-year warranty on parts and one year for labor, on-site service for the first year, and round-the-clock technical support.

## 2 DELL DIMENSION XPS M200S

**PRO:** Very fast; components, software bundle, service quality, and reliability rating are all tops

**CON:** Maximum RAM limited to 64MB

After four months at the head of the chart, the XPS M200s is unseated by Dell's Pentium II entry. But it remains a solid runner-up. This Pentium MMX-200 minitower has a winning combination of speed, high-quality components, good design, and ▶

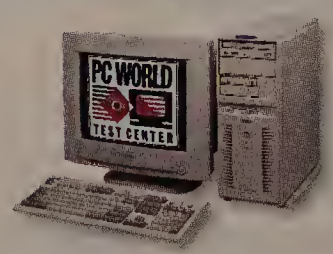
## TOP 20 POWER DESKTOPS — STANDARD FEATURES

| | SYSTEMS | CPU | RAM (MB) | Secondary cache (K) | Hard drive (GB) | Graphics adapter | Video RAM (MB/type) | Monitor tube/ viewable diagonal (inches) | Screen pitch (mm) | CD-ROM drive speed |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dell Dimension XPS H266* | Pentium II-266 | 32 | 512 | 6.4 | Matrox Millennium II | B/WRAM | 17/15.9 | .25 | 12X |
| 2 | Dell Dimension XPS M200s* | Pentium MMX-200 | 32 | 512 | 3.2 | Matrox Millennium | 4/WRAM | 17/15.8 | .28 | 12X |
| 3 | Dell Dimension XPS Pro200n* | Pentium Pro-200 | 32 | 256 | 3.2 | Number Nine Imagine 12B II | 4/VRAM | 17/15.6 | .28 | 12X |
| 4 | Dell OptiPlex GXi 200M* | Pentium MMX-200 | 32 | 512 | 3.2 | Matrox Millennium | 4/VRAM | 17/16 | .28 | 8X |
| 5 | Micron Millennia Pro2 200 B* | Pentium Pro-200 | 32 | 256 | 3.1 | Diamond Stealth 3D 2000 | 4/EDO DRAM | 17/16 | .26 | 12X |
| 6 | Gateway 2000 G6-266 M | Pentium II-266 | 32 | 512 | 6.4 | STB Virge GX | 4/EDO DRAM | 17/15.9 | .28 | 12X |
| 7 | Gateway 2000 G6-200 | Pentium Pro-200 | 32 | 256 | 2.1 | STB Velocity 3D | 4/VRAM | 17/15.9 | .26 | 12X |
| 8 | Dell OptiPlex GX Pro 200 | Pentium Pro-200 | 32 | 512 | 3.1 | Matrox Millennium | 4/WRAM | 17/15.8 | .28 | 8X |
| 9 | Quantex QP6/266 SM-4 | Pentium II-266 | 32 | 512 | 4.3 | Matrox Millennium II | 4/WRAM | 17/16.1 | .25 | 12X |
| 10 | HP Vectra VA 6/200 MT | Pentium Pro-200 | 32 | 256 | 2.5 | Matrox Millennium | 2/WRAM | 17/15.7 | .28 | 8X |
| 11 | HP Pavilion 7370V | Pentium MMX-200 | 32 | 256 | 4 | integrated | 2/EDO DRAM | 17/15.6 | .28 | 16X |
| 12 | Quantex QP6/200 SM-4 | Pentium Pro-200 | 64 | 256 | 3.2 | Matrox Millennium | 4/WRAM | 17/16.1 | .26 | 12X |
| 13 | Sys Technology Sys Performance P200T2M | Pentium MMX-200 | 32 | 512 | 3.2 | Diamond Stealth 3D 3000 | 4/VRAM | 17/15.8 | .26 | 12X |
| 14 | Netis N6200PCI | Pentium Pro-200 | 32 | 256 | 2.1 | Matrox Millennium | 2/WRAM | 17/15.1 | .28 | 8X |
| 15 | Sys Technology Performance Pro 200 | Pentium Pro-200 | 32 | 256 | 2.5 | Matrox Millennium | 2/WRAM | 17/15 | .26 | 12X |
| 16 | Multiwave P-200 MMX | Pentium MMX-200 | 32 | 512 | 2.1 | Matrox Millennium | 4/WRAM | 17/16 | .26 | 12X |
| 17 | CLR Infinity P-200 MMX | Pentium MMX-200 | 32 | 512 | 3.2 | Number Nine Imagine 128 | 4/VRAM | 15/13.7 | .28 | 12X |
| 18 | Sys Technology Performance Pro 266 | Pentium II-266 | 32 | 512 | 4.3 | Matrox Millennium | 4/WRAM | 17/15.8 | .26 | 12X |
| 19 | Acma zPower Pro-200 | Pentium Pro-200 | 32 | 256 | 2.1 | STB Velocity 3D | 4/VRAM | 17/15.5 | .28 | 8X |
| 20 | Polywell Poly K6200Mx | AMD K6-PR200 | 32 | 512 | 5.1 | Diamond Stealth 3D 2000 | 4/EDO DRAM | 17/15.8 | .28 | 12X |

* Best Buy [1] Five years on CPU and main RAM, three years on other parts. [2] Download only, upload at 33.6 kbps. [3] Toll call. [4] 24 hours daily for first year.

top-rated service. It sells for a near-budget $2579, thanks to a $120 price drop.

With a WorldBench score of 234, this home-office contender is faster than most Pentium Pros but is priced far lower. The multimedia setup is great, including Altec Lansing's ACS 290 speakers with subwoofer. A 3.2GB hard drive provides ample storage. Communications are handled by a U.S. Robotics 33.6-kbps voice modem and Vocal Point phone/fax/data software. Also in the software bundle is Microsoft Office Professional, a top-rated suite of business applications. The system's 4MB Matrox Millennium card, while not a high-end, workstation-class board, is excellent for general graphics chores. Keep in mind that the M200s is limited to 64MB of system memory—only half the amount most PCs can take. Users of programs such as Photoshop and other demanding graphics software might want to be able to add more.



Dell Dimension XPS M200s

The case is easy to open. Turn a thumbscrew, and the side panel comes off to reveal an impeccably clean interior with plenty of free slots and bays.

Dell's system documentation is thorough and easy to understand, and the company's support policies are superb, although its labor warranty recently dropped from three years to one. Dell's PC reliability rates among the best, according to *PC World* readers.

### 3 DELL DIMENSION XPS PRO200N

**PRO:** Very fast, has both top reliability rating and excellent support

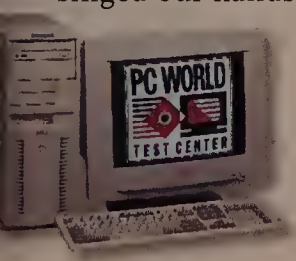
**CON:** None significant

Even with a $220 price cut this month, the $2779 XPS Pro200n is more expensive and a tad slower than its higher-ranking MMX-200 sibling. But this powerful minitower is a good choice for a Windows NT workstation, thanks to its Pentium Pro-200 processor. The features that hike up the Pro200n's price are the extra 256K of secondary cache and a high-end graphics card, the Number Nine Imagine 128 II, that costs $300 more than the Matrox Millennium. Other features of the Pro200n and M200s are very similar, including

| | | EXPANDABILITY | | | | | | CUSTOMER SUPPORT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Modem speed (kbps) | Sound board | Case style | Max. RAM (MB) | Maximum secondary cache (K) | Open RAM sockets | Open drive bays (ext./int.) | Open slots | Warranty for parts/labor (years) | Weekday toll-free support (hours) | Weekend support | Online support |
| 33.6 | integrated Yamaha OPL3-Sax | minitower | 128 | 512 | 2 | 2/1 | 4 | 3/1 | 24 | Sat., Sun. | BBS, CIS, WWW |
| 33.6 | integrated Vibra 16c | minitower | 64 | 512 | 1 | 2/1 | 3 | 3/1 | 24 | Sat., Sun. | BBS, CIS, WWW |
| 33.6 | Sound Blaster AWE32 | minitower | 128 | 512 | 2 | 3/1 | 4 | 3/1 | 24 | Sat., Sun. | BBS, CIS, WWW |
| 33.6 | integrated Vibra | desktop | 512 | 512 | 3 | 1/0 | 3 | 3/1 | 24 | Sat., Sun. | BBS, CIS, WWW |
| 33.6 | integrated Sound Blaster 32 | minitower | 512 | 512 | 3 | 3/0 | 4 | 3 [1]/1 | 24 | Sat., Sun. | CIS, WWW |
| 56 [2] | Ensoniq Audio PCI | minitower | 128 | 512 | 2 | 1/2 | 2 | 3/3 | 24 | Sat., Sun. | AOL, BBS, CIS, MSN, WWW |
| – | Ensoniq Soundscape Vivo 90 | tower | 256 | 256 | 2 | 3/6 | 4 | 3/3 | 24 | Sat., Sun. | AOL, BBS, CIS, WWW |
| 33.6 | Creative Labs Vibra 16s | desktop | 512 | 512 | 3 | 1/1 | 3 | 3/1 | 24 | Sat., Sun. | AOL, BBS, CIS, MSN, WWW |
| 33.6 | integrated Yamaha OPL3-Sax | minitower | 128 | 512 | 0 | 3/3 | 4 | 3/1 | 24 | Sat., Sun. | BBS, WWW |
| – | Sound Blaster 16 PnP | minitower | 192 | 256 | 4 | 2/1 | 4 | 3/3 | 11 [3] | – | AOL, BBS, CIS, WWW |
| 33.6 | integrated Yamaha | minitower | 128 | 256 | 2 | 2/2 | 5 | 1/1 | 24 [3] | Sat., Sun. | AOL, BBS, CIS, WWW |
| 33.6 | Ensoniq Soundscape Vivo 90 | minitower | 128 | 256 | 0 | 3/3 | 4 | 3/1 | 24 | Sat., Sun. | BBS, WWW |
| 33.6 | Sound Blaster 32 | minitower | 512 | 512 | 4 | 3/2 | 4 | 1/1 | 24 | Sat., Sun. | – |
| 33.6 | Sound Blaster 16 PnP | tower | 256 | 512 | 6 | 3/0 | 5 | 1/3 | 10 | Sat. | BBS, WWW |
| 33.6 | Sound Blaster 32 PnP | minitower | 128 | 512 | 2 | 3/1 | 4 | 1/1 | 24 | Sat., Sun. | – |
| 33.6 | Ensoniq Soundscape Vivo 90 | minitower | 512 | 512 | 2 | 3/1 | 4 | 1/1 | 10 | Sat. | BBS |
| 28.8 | Sound Blaster AWE32 | minitower | 256 | 512 | 2 | 2/0 | 5 | 3/3 | 12 | Sat. | WWW |
| 33.6 | Sound Blaster 32 PnP | minitower | 512 | 512 | 4 | 3/2 | 2 | 1/1 | 24 | Sat., Sun. | – |
| 33.6 | Sound Blaster 16 PnP | minitower | 512 | 256 | 2 | 1/1 | 4 | 3/1 | 10 | – | BBS, WWW |
| 33.6 | Crystal 16-bit (OEM) | minitower | 256 | 512 | 2 | 2/0 | 4 | 3/5 | 11 [4] | Sat. | BBS, WWW |

their generous software bundles.

The Pro200n also has the same minitower case as the M200s. The CD-ROM drive is located at the top of the front panel, making it easily accessible, and the power and reset buttons lie in the center of the panel, well away from the floppy disk eject button. The interior is roomy, and the four free slots and four free bays are easy to get to, but better ventilation may be needed. The processor's heat sink singed our hands when we touched it, despite the presence of a big cooling fan.



Dell XPS Pro200n

The support policies for this system mirror those of its XPS M200s sibling: You get a three-year parts warranty and one year for labor, and round-the-clock toll-free support that gets a great rating in our reader fax-back surveys. Readers also give Dell excellent marks for system reliability.

## 4 DELL OPTIPLEX GXI 200M

**PRO:** Fast; above-average service, support, and system reliability

**CON:** Expensive, limited expandability

Like all OptiPlex models, this $3255 minitower isn't for the faint of budget. But it has everything you need in a high-end corporate desktop: snappy performance, bountiful storage, built-in networking, and some of the best support available.

Price is a major difference between the Dimension and OptiPlex lines: The OptiPlex GXi 200M costs $676 more than the number two Dimension XPS M200s. But that isn't too surprising considering one of the major extras: OptiPlex systems are geared for network use. Thanks to the integrated ethernet adapter, you can connect the OptiPlex to a LAN right out of the box. If you plan to use this system as a corporate workstation, you may be able to dispense with some components such as the Altec Lansing ACS 90 speakers (use a pair of inexpensive headphones instead) and the 33.6-kbps U.S. Robotics telephony modem if your company already has a voice-mail system and a fax and e-mail server. Depending on your needs, you might even consider something smaller than the included 3.2GB hard drive.

This Pentium MMX-200–based PC ▶

# Car shopping bytes.

Plymouth Neon

That's why Plymouth happily introduces car shopping, Silicon Valley style. Just point your browser to www.plymouthcars.com and you can shop Plymouth's Internet showroom and spec out the car of your choice. Then, take the printout to a dealership and let a friendly salesperson do the rest. Or visit Plymouth Place™ at your local mall and learn all about Plymouth on our tech cart computer. It will tell you everything you want to know about our new cars. So shop Plymouth. You'll always get someone who speaks your language, even if it's cyber-talk.

**One clever idea after another. That's Plymouth.**

scored 226 on WorldBench, only a tad below average for its processor class. The 17-inch Dell D1728D-LS monitor delivers bright colors and clear, crisp graphics and text. But it isn't Dell's top 17-inch monitor. For an extra $100, you can move up to a 17HS Trinitron, which displays even sharper text and provides more on-screen controls. The 4MB Matrox Millennium graphics board and built-in 16-bit Vibra sound are fine for most office workstations. There's even a port for Universal Serial Bus peripherals, which should start appearing later this year.

Dell OptiPlex Gxi 200M

The GXi 200M is intelligently designed and well put together. We easily removed the desktop case cover by hand-turning a screw. The expansion slots sit on a daughtercard above the motherboard; we found plugging cards into them as painless as it gets. We have only two beefs. With only one available external drive bay, one free 32-bit slot, and two 16-bit slots, the expansion options are a little restricted. You'll also find that the three available DIMM sockets are sequestered behind snaking cables, which can make them somewhat hard to reach.

Dell provides an abundance of ▶

## TOP 20 POWER DESKTOPS

| | SYSTEMS | CPU | RAM (MB) | Secondary cache (K) | PC WorldBench score |
|---|---|---|---|---|---|
| 1 | Dell Dimension XPS H266* | Pentium II-266 | 32 | 512 | 263 |
| 2 | Dell Dimension XPS M200s* | Pentium MMX-200 | 32 | 512 | 234 |
| 3 | Dell Dimension XPS Pro200n* | Pentium Pro-200 | 32 | 256 | 230 |
| 4 | Dell OptiPlex GXi 200M* | Pentium MMX-200 | 32 | 512 | 226 |
| 5 | Micron Millennia Pro2 200 B* | Pentium Pro-200 | 32 | 256 | 231 |
| 6 | Gateway 2000 G6-266 M | Pentium II-266 | 32 | 512 | 263 |
| 7 | Gateway 2000 G6-200 | Pentium Pro-200 | 32 | 256 | 234 |
| 8 | Dell OptiPlex GX Pro 200 | Pentium II-266 | 32 | 512 | 230 |
| 9 | Quantex QP6/266 SM-4 | Pentium II-266 | 32 | 512 | 259 |
| 10 | HP Vectra VA 6/200MT | Pentium Pro-200 | 32 | 256 | 229 |
| 11 | HP Pavilion 7370V | Pentium MMX-200 | 32 | 256 | 222 |
| 12 | Quantex QP6/200 SM-4 | Pentium Pro-200 | 64 | 256 | 230 |
| 13 | Sys Technology Sys Performance P200T2M | Pentium MMX-200 | 32 | 512 | 233 |
| 14 | Netis N6200PCI | Pentium Pro-200 | 32 | 256 | 230 |
| 15 | Sys Technology Performance Pro 200 | Pentium Pro-200 | 32 | 256 | 236 |
| 16 | Multiwave P-200 MMX | Pentium MMX-200 | 32 | 512 | 235 |
| 17 | CLR Infinity P-200 MMX | Pentium MMX-200 | 32 | 512 | 229 |
| 18 | Sys Technology Performance Pro 266 | Pentium II-266 | 32 | 512 | 262 |
| 19 | Acma zPower Pro-200 | Pentium Pro-200 | 32 | 256 | 231 |
| 20 | Polywell Poly K6200Mx | AMD K6-PR200 | 32 | 512 | 241 |

*Best Buy

## PERFORMANCE

Word 7.0 for Windows 95
Excel 7.0 for Windows 95
Picture Publisher 6.0 for Windows 95
Paradox 5.0 for Windows
WordPerfect 6.1 for Windows
1-2-3 release 5 for Windows

**HOW WE TEST** All systems are tested with PC WorldBench, PC World's application-based benchmark. A higher PC WorldBench score is better. All PCs have Windows 95, and video resolution is set to 800 by 600 in 256 colors. We run automated scripts on six popular business applications, performing common tasks such as spelling checks, scrolls, saves, sorts, and recalculations. The PC WorldBench score is a sum of the weighted result of each script: Word (25 percent), Excel (20 percent), Picture Publisher (15 percent), Paradox (15 percent), WordPerfect (15 percent), and 1-2-3 (10 percent). For more details on our benchmark and how we run it, see PC World Online (www.pcworld.com/testing).

KDS

What are you looking at?℠

Choosing a monitor is typically a matter of balancing what you want with what you can afford. Fortunately, KDS makes sure you always come out on top with Visual Sensations.™

That's because Visual Sensations are built and sold based on four basic brand principles. First, they're neither under- nor over-designed, but made to function specifically for their intended use, whether it's professional graphics or business applications. Second, they're extremely reliable, a quality made possible by ISO-certified, fully robotic manufacturing. Third, without sacrificing either functional design or superior reliability, they consistently offer you the best value. And finally, Visual Sensations come with service and support that's second to none, as demonstrated by KARES, the industry's only lifetime, rapid replacement service.

So no matter what you're looking at, call KDS or check out www.kdsusa.com for more information about Visual Sensations.

Because when it comes to choosing the right monitor, they won't leave you up in the air.

Sales: 800-237-9988
Specs-By-Fax: 800-511-2589

KDS ADVANCED REPLACEMENT KARES EXPRESS SERVICE

© 1997 KOREA DATA SYSTEMS CO., LTD. All rights reserved. Visual Sensations is a trademark of KOREA DATA SYSTEMS CO., LTD.

**Circle 170 on reader service card**

support for the GXi 200M. The system's manual is nicely illustrated, easy to understand, and well organized; the on-screen documentation is helpful; and technical support is available around the clock. As with all its OptiPlex PCs, Dell backs the GXi 200M with a three-year warranty on parts and one year on labor. Our readers give high reliability ratings to Dell systems, and the company consistently scores in the top tier for service and support.

### 5 MICRON MILLENNIA PRO2 200 B

**PRO:** Very fast; has highly rated modem, second processor socket, good reliability rating

**CON:** Long waits for technical support

Micron's Millennia Pro2 200 B is a very strong choice in a corporate minitower, and at $2738—$221 down from June—it's very attractively priced. This Millennia is also our top pick among the systems we've tested to offer an upgrade path to a dual-processor system. The system's Intel motherboard includes a socket for adding another Pentium Pro-200 processor—an unusual and useful option that allows multiprocessing with an operating system that can take advantage of it, such as Windows NT.

The Millennia Pro2 comes with solid Pentium Pro performance and top-notch peripherals. Its PC WorldBench score of 231 puts it a bit above average for Pentium Pro-200 systems, and we found highly rated components in it, such as the U.S. Robotics Sportster 33.6-kbps internal modem and the Diamond Stealth 3D 2000 graphics board, both of which regularly place on the Top 10 charts. Micron also includes a large 3.1GB hard drive, a nice pair of Advent AV007 speakers, and an integrated sound chip. The software bundle is Microsoft Office.

Micron Millennia Pro2 200B

The Millennia's warranty covers the CPU and main RAM for five years and other parts for three. You also get free on-site service for the first year and 24-hour toll-free tech support. Though readers in our fax-back surveys have reported long hold times, they still give Micron very high marks for support quality and are usually pleased with system reliability.

## New This Month

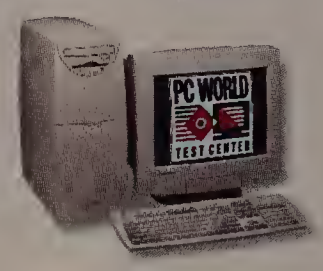
The following PCs made our Power Desktops chart for the first time this month. For original reviews of previously tested PCs on the chart, visit our Web page (www.pcworld.com/t20pcs).

### 6 GATEWAY 2000 G6-266 M

**PRO:** Fast as a rocket, great multimedia, 56-kbps modem, Zip drive, top support

**CON:** So-so reliability rating, haphazard manuals

Gateway 2000's new G6-266 M lacks nothing for the home office, and this Pentium II minitower ties with this month's Dell Pentium II entry as the fastest Top 20 PC ever tested, with a WorldBench score of 263. It has an unmatched multimedia and communications setup. It looks good, too, with beveled edges, a stylish curvilinear design, and a removable front panel that conceals all but the CD-ROM and floppy drives. The $3109 price is terrific for this PC—it includes Microsoft Office 97 Small Business Edition and several game and reference titles.



Gateway 2000 G6-266 M

Only Gateway's below-average record for system reliability should give you pause. Our latest fax-back survey suggests that the company's quality control could be better, and a couple of flags of our own went up during this review. The test system came with the wrong hard drive documentation, and the main manual, while well written and beautifully illustrated, covered several Gateway systems and failed to mention some of the latest features, such as the two USB ports.

Even with these concerns, there's much to recommend this machine. The multimedia setup is superb—it's among the best we've experienced on a PC. The wavetable-equipped sound card helped, but it's the speaker system that steals the show. Each of the external side speakers (a pair of Altec Lansing ACS 410 units) has, in addition to a half-inch dome tweeter, a pair of 3-inch bass speakers aimed forward and out to the sides, complemented by a 40-watt subwoofer (the ACS 251). Tchaikovsky's *1812 Overture* sounded impressive even in stereo mode, but when we switched to the Surround-Sound setting, the effect was divine.

Rounding out the multimedia setup is a very good graphics system and a 12X CD-ROM drive. The 17-inch monitor is exceptionally sharp and flicker-free. The 4MB Virge GX video card offers true-color images up to 1024 by 768 resolution.

Media files, such as .avi movie clips, can scarf up disk space quickly, but the G6-266 is uniquely prepared to deal with them. It comes with a huge 6.4GB hard disk and an Iomega Zip drive, which lets you move multimegabyte files to other Zip drive–equipped PCs using compact, removable 100MB disks.

The core of the G6-266's communications setup is its Telepath modem. Under the label, it's really a U.S. Robotics Sportster, one of the most enduring brands on our Top 10 Modems chart. This version is 56-kbps—the first we've seen in a Top 20 PC.

Respondents to our latest fax-back survey give high praise for Gateway 2000's technical support. The policies are very generous—a full three-year warranty, a year of free on-site service, and 24-hour phone support, weekends included.

### 8 DELL OPTIPLEX GX PRO 200

**PRO:** Very fast, easy to upgrade, built-in networking, DMI-compliant

**CON:** Multimedia is a little behind the times

This system, with an updated motherboard BIOS, replaces the GX Pro 200 we reviewed two months ago. It continues to offer top performance and above-average features, and you still get Dell's excellent service and support. Now the GX Pro 200 also has a reasonable $3246 price—over $1000 less than the unit we reviewed in May. It's a fine choice for IS managers looking to equip offices with high-powered network-ready PCs.

Dell GX Pro 200

And high-powered it is. With a PC WorldBench score of 230, its performance remains the same as it was in ▶

U.S. Robotics®

# TRAVEL light

and stay in touch
with your PC anywhere.

To run your life, you need information. Appointments, contacts, e-mail. And it's probably locked tight on your PC back in some office. The new PalmPilot™ connected organizer changes all that. It lets you enter, update, and access information. And HotSync™ technology lets you synchronize that data with your PC at the touch of a button. Whatever your most important information, PalmPilot delivers it. Anywhere. Anytime.

Optional links are available to Schedule+, Lotus Organizer, Symantec ACT!, Ascend 97, and others (sold separately).

Call 1-800-881-7256 ext. 12 or visit our web site at http://www.usr.com/palm for the PalmPilot retailer nearest you.

## PalmPilot™

**PalmPilot Personal $299***

- Backlit display for low-light viewing
- Instantly syncs data with your PC
- Easy expense tracking
- Stores thousands of entries
- User upgradeable to Professional Edition

**PalmPilot Professional $399***

**All PalmPilot Personal features plus:**

- Pocket e-mail
- Internet ready (TCP/IP support)
- Twice the memory

* The average U.S. street price for PalmPilot Personal Edition is $299. The average U.S. street price for PalmPilot Professional Edition is $399. PalmPilot MacPac, required for Macintosh connectivity, is sold separately. Some features may not be supported on Macintosh. © 1997 U.S. Robotics. All rights reserved. U.S. Robotics and the U.S. Robotics logo are registered trademarks, and HotSync, PalmPilot, and the PalmPilot logo are trademarks of U.S. Robotics and its subsidiaries. All other brands and product names are trademarks or registered trademarks of their respective holders.

**Circle 173 on reader service card**

May, keeping this Pentium Pro-200 desktop on a par with the average of systems based on this CPU. The GX Pro 200 also comes stocked with many highly rated peripherals, such as its U.S. Robotics Sportster 33.6-kbps modem and a Matrox Millennium graphics card. The software bundle includes Microsoft's Office 97 suite of business applications and Windows NT Workstation 4.0, in addition to Windows 95.

Not all the features are cutting edge. The 17-inch Dell 17LS monitor that came with our test system produced reasonably sharp images, but Dell's Trinitron model would have been more fitting. Corporate desktops tend to be a little behind the times on multimedia, and the GX Pro 200 is no exception: It comes with a pair of Altec Lansing speakers, but it lacks both wavetable audio and a MIDI port.

Nevertheless, the GX Pro 200 will satisfy system administrators. Particularly useful is Desktop Management Interface 2.0. Using compatible asset management software, IS managers can find out exactly how a given workstation on a LAN is configured, all from another terminal. The GX Pro's built-in 3Com Fast Ethernet network port is another nice addition.

Dell's technical support is excellent. Representatives are available around the clock, weekends included, and the system is backed by a three-year parts and one-year labor warranty. Our fax-back survey results suggest that Dell lives up to its support policies. Most respondents continue to praise the company for its service, and its PCs for their reliability.

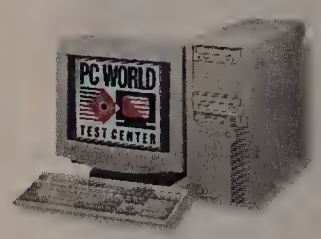
## 9 QUANTEX QP6/266 SM-4

**PRO:** Very low cost for a Pentium II, extremely fast

**CON:** Reliability rating is only fair

Quantex's QP6/266 SM-4 has the distinction of being the lowest-priced Pentium II system on our Power chart. At $2899, it undersells the next least expensive Pentium II we reviewed, Gateway's G6-266M, by $210. Yet you also get blazing speed and no shortage of features.

What keeps the QP6/266 from placing higher, however, is reliability. In our latest reader fax-back survey, Quantex has improved from poor to fair compared with other major PC vendors. This is a good trend, but a fair rating indicates that a number of readers are still experiencing trouble with their PCs. The minitower we received may reflect some of Quantex's problems. Our review unit's modem board was completely detached from its expansion slot, and the hard drive didn't work at first. We had to reseat the modem and spend time with Quantex support to get the drive up and running.



Quantex QP6/266 SM-4

The QP6/266 posted a PC WorldBench score of 259, a few points below the three other Pentium II machines tested, but still extremely fast. At that level, it's nearly impossible to distinguish any speed difference between the four systems as you work. The QP6's multimedia and graphics hardware is very good and should certainly satisfy most home-office users. The 12X CD-ROM drive is fast enough for nearly anyone. The Yamaha sound chip and Altec Lansing ACS 400 speakers and ACS 250 subwoofer delivered full, rich sound. The .25-dot-pitch MaxDX700T 17-inch monitor and 4MB Matrox Millennium II graphics board produced razor-sharp, true-color images. And the interior was very clean, with plenty of free, accessible slots and bays for adding peripherals.

Capping off the QP6's list of home-office assets is a generous software bundle that includes Corel WordPerfect Suite 7.0 and Intuit Quicken, plus a CPI ViVa CommCenter 33.6 modem. Microsoft's Phone, a phone/fax/data program, comes bundled with the modem; you can use it to take phone messages and send and receive faxes.

Performance P200T2M

Microsoft Phone also comes with a module called Voice, which recognizes some spoken Windows commands and reads aloud any text you select, such as e-mail messages. Voice isn't ready for prime time yet, however. The several seconds it takes to interpret commands seems like eons compared to how quickly you can type or mouse them, and the program can make some disturbing errors—for example, it kept interpreting the command "Press Cancel" as "Cut Selection."

We were not impressed with the QP6/266's documentation. The user manual has lots of supporting photos and tries to be reader-friendly by covering many Windows 95 terms, but it's still too technical in places. However, you can call support anytime night or day, weekends included. Quantex backs its PCs with a three-year parts and one-year labor warranty, and our fax-back responses indicate general satisfaction with the company's support.

## 13 SYS TECHNOLOGY SYS PERFORMANCE P200T2M

**PRO:** Very fast, very good graphics system

**CON:** No user guide, no business applications

If you've just found out that "PC" stands for something besides "politically correct," you may want to think twice about buying this machine—its documentation consists only of a grab bag of component manuals, not enough to anchor the uninitiated. But if you're looking for a fast and affordable PC and don't require handholding to get it running, the $2657 multimedia- and modem-equipped Sys Performance P200T2M is a strong choice.

Few systems offer a better combination of speed and features at this price. This Pentium MMX-200 minitower blazed through PC WorldBench, earning a 233 score. Not only is it noticeably faster than the average desktop based on the same processor, it outpaces most Pentium Pro-200 PCs we've tested. The P200T2M is no scaled-down box, either. It comes with a sizable 3.2GB hard drive and a very good multimedia setup. The 12X Teac CD-512E drive garnered a Best Buy in our CD-ROM drive roundup (see "12X, 16X, 18X: The Fastest Drives Alive"). The wavetable-equipped Sound Blaster audio card and the pair of MIDI-land MLi-65 speakers, while a little shy on bass, still serve up very nice sound. A fast Diamond Stealth 3D 3000 video card and crisp 17-inch monitor neatly handle the graphical chores, delivering crisp, true-color images at up to 1024 by 768 resolution. Sys also includes a 33.6-kbps modem and ▶

## THE POWERLOOK II SCANNER

**THE MOST ADVANCED TECHNOLOGY IS USED TO OUTPERFORM THE AGFA ARCUS II:**

- Scans three times faster; full-color page in 41 seconds
- Higher 3.2 dynamic range for greater details
- Cold cathode lamp lasts ten times longer than a fluorescent lamp
- Bundled with binuscan® PhotoPerfect software renowned for its high quality auto color correction, image enhancement, and separation tables

**Get $200 off when you trade in your old scanner!***

*Act now. Offer expires June 30, 1997. Call 1-800-249-1882 for details.

# THE POWERLOOK II SCANNER MAKES THE COMPETITION LOOK LIKE ANCIENT TECHNOLOGY.

*"As for the output for the PowerLook II, 'gorgeous' is an understatement."*

The PowerLook II from UMAX gives you the latest in scanner technology. With faster speeds and better features, it makes our competitors' scanners look like ancient relics. The PowerLook II produces rich images with a full range of colors and the sharpest details in highlights and shadows. PowerLook II. It brings scanning technology into the modern world.

**For more information, call 1-800-859-2728 or visit us at www.umax.com.**

UMAX®

© 1997 UMAX Technologies, Inc. All rights reserved. UMAX is a registered trademark of UMAX Technologies, Inc. All other brands and product names are trademarks or registered trademarks of their respective companies.

**Circle 250 on reader service card**

COMit fax/data software. The PC comes with some game and reference titles (including Nascar Racing and Compton's Interactive Encyclopedia), but you'll have to pay extra for any productivity programs.

We were impressed by what we know about Sys Technology's support. While its one-year warranty is considered short these days, the company provides a year of on-site service, and its phone support is available 24 hours per day, weekends included. We don't have enough fax-back survey results to formally rate Sys's service or the reliability of its PCs, but the technicians we've spoken to in our anonymous calls to support have been easy to reach, knowledgeable, and courteous.

## 18 SYS TECHNOLOGY PERFORMANCE PRO 266

**PRO:** Superfast, big SCSI hard drive, Fast Ethernet card, good speakers

**CON:** Very pricey, poor manuals, no applications

The Performance Pro 266 is a PC for all reasons—and that's good and bad. It's good because, with its blow-your-doors-off speed, Fast Ethernet connectivity, SCSI hard drive, multimedia, and 33.6-kbps modem, the Performance Pro is an equally strong candidate for a server, a corporate PC, or (with the optional software bundle) a home-office system. And it's bad because all the extras drive up the PC's price to a steep $4369, with Windows 95 the only software included.

Sys Technology's minitower is based on the 266-MHz Pentium II processor—and it shows. With a terrific PC WorldBench score of 262, only the Dell and Gateway 2000 Pentium II machines are faster. Its 3Com Fast Ethernet card allows 100-mbps LAN connections, suiting this PC nicely for the corporate workstation scene. At the same time, home-office users will appreciate its built-in 33.6-kbps modem.

Performance Pro 266

Sys didn't pull out all the stops for multimedia, but it's not a bad setup. The 32-bit Sound Blaster audio card doesn't offer quite the level of fidelity that you get from wavetable-enhanced cards, but the 12X CD-ROM drive is plenty fast, and the large 4.3GB hard disk should accommodate your media file collection for some time. The MLi-65 speakers were the nicest surprise—they deliver crisp, pure tones even with the volume cranked up.

The Performance Pro 266 does have a few ergonomic blemishes, but it's generally pleasant to use. The Windows 95 keyboard feels a little cheap and flexy, and the key for rebooting the system is unlabeled (because it looks like a fat <Backspace> key, we found out its true purpose the hard way). Still, the keyboard is comfortable and quiet.

Documentation for the Performance Pro is pretty rough. It's a smattering of booklets—one for each peripheral and one for the system board (the latter something only an electrical engineer could love). But Sys's support policy is competitive: Parts and labor are covered for just a year, but that includes on-site service and round-the-clock technical support.

## 20 POLYWELL POLY K6200MX

**PRO:** Very fast, inexpensive, long warranty

**CON:** Poorly organized documentation, cheap-feeling keyboard

Polywell's Poly K6200Mx is the first review system we received that's based on AMD's K6 processor. This 200-MHz machine achieved a PC WorldBench score of 241, beating the fastest Pentium Pro-200 unit (Sys Technology's Sys Premier, reviewed in June) by a few WorldBench points. That makes it faster than all other systems we've covered, except for the four new Pentium II PCs in this month's roundup. It's clear that AMD's K6 processor is a powerful competitor to Intel's vaunted Pentium II chip.

Based only on the performance and features that you get for the price, the Poly K6200Mx is hard to beat. Though the manual's technobabble may leave some folks scratching their heads, this $2569 minitower is an excellent candidate for PC-savvy but budget-conscious shoppers seeking a very powerful home-office system.

The K6200Mx is well designed and comes with some excellent components. We had to undo a few screws to get into the dark-gray case, but once inside we found everything cleanly laid out. The giant 5.1GB Maxtor hard disk is particularly fast for an IDE model, according to benchmarks we ran in April ("Hard Disks for Bargain Hunters"). The Maxtor drive, plus the powerful 4MB Diamond Stealth 3D 2000 graphics card, makes the K6200Mx ideal for disk-intensive applications such as juggling huge database files and rasterizing complex high-resolution images.

Polywell Poly K6200Mx

The only thing you'll need for a complete multimedia setup is a pair of speakers—the system already has a 12X CD-ROM drive, a Crystal 16-bit sound board, and a Sampo 17-inch monitor. You can use the GVC 33.6-kbps modem, along with the bundled Super Voice 2.2 software, to set up the PC to answer and record phone calls as well as to send and receive faxes. Polywell also includes the Microsoft Office 97 suite of applications.

The K6200Mx has a few rough edges. For example, the keyboard has a cheap, jangly feel. And as we alluded to earlier, the documentation could easily frighten off novices. It consists of a bunch of peripherals manuals, plus a main system manual that could use better organization. The introduction barrages the reader with technical terms, while the more tutorial plain-language section is buried toward the back. Should you cry uncle, Polywell provides technical support 24 hours per day, seven days a week for the first year. The company covers the K6200Mx with a three-year warranty on parts and an unusually long five years on labor. ▶

## Beyond the Top 20

We evaluated these systems along with the others, but they didn't score high enough to reach the Top 20 Power Desktops chart. For write-ups, see PC World Online (www.pcworld.com/t20pcsnaps).

- **Altura Pro-200**
- **CLR Infinity PT5-AX**
- **HP Vectra 6/200 MT**
- **NEC Ready 9716**
- **Nova P551420 MMX**
- **Toshiba Infinia 7201**

# SUBSCRIPTION SAVINGS CERTIFICATE

# YOURS FREE!

*Plus, 69% off the cover price!*

**As a special bonus with your order, you will receive the PC WORLD Windows 95 mousepad featuring easy reference and helpful tips to get the most out of Windows 95!**

**PC WORLD**

❑ YES! Enter my subscription to PC WORLD and send my FREE mousepad! I'll pay just $21.97 for 12 monthly issues, that's 69% off the regular newsstand rate.

Name _____

Company _____

Address _____

City _____ State _____ Zip _____

Savings based on annual newsstand price of $71.40. Please allow 6 to 8 weeks for delivery of your first issue. Foreign orders add $46 postage. Canadian orders add $20 postage plus 7% GST (#R124669680).

4MPK7

Plug into PC WORLD Online now!
http://www.pcworld.com

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 1262 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

**PC WORLD**

**SUBSCRIPTION DEPARTMENT**
PO BOX 51833
BOULDER CO 80323-1833

# live a colorful life.

HYUNDAI'S CRITICALLY ACCLAIMED DELUXSCAN® 17" (15.8" V) AND 15" (13.8" V) COLOR MONITORS PUT EVERYTHING IN PERSPECTIVE. WITH HIGH RESOLUTION IMAGES AT FLICKER-FREE REFRESH RATES, ON-SCREEN DIGITAL CONTROLS, NON-GLARE/ANTI-STATIC, DARK TINT, FLAT-SQUARE SCREENS, A FULL 3 YEAR WARRANTY AND A VERY VIBRANT DISPLAY—HYUNDAI MONITORS REMIND YOU EVERYDAY THAT LIFE IS BRILLIANT WHEN YOU SEE THINGS CLEARLY. FOR MORE PRODUCT INFORMATION CALL 800.568.0060.

Circle 110 on reader service card

The National Software Testing Laboratory Inc. (NSTL) found the EPSON Stylus Color 600 outperforms avg. speeds of the HP DeskJet 694C by 31% and the Canon BJC-4200 by 38%. The EPSON Stylus Color 800 outperforms avg. speeds of the HP DeskJet 870Cxi by 25%. Print speeds tested with Windows 95 and Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Adobe PageMaker and Adobe Photoshop. NSTL report available by calling 1-800-GO-EPSON. Prices may vary. EPSON and EPSON Stylus are registered trademarks of Seiko Epson Corp. Micro Piezo is a trademark of Epson America, Inc. © 1997 Epson America, Inc.

AT 1440 DPI
YOU SEE A FAKE.

# YOU'VE GOT TO SEE IT IN EPSON COLOR.

Presenting the new extraordinary EPSON® 1440 dpi printers. Outrageous Photo Quality color. Microscopic detail. Laser-quality black text. All from our exclusive Micro Piezo™ Technology – for the smallest, cleanest, most consistent dot ever created. You'll get outputs that look just like originals – at overall print speeds 21% faster than any competitor's. Starting at just $299. Call 1-800-GO-EPSON and ask for Operator 3064 or visit us at www.epson.com. You'll see exactly why these printers are, well... real gems.

## INTRODUCING THE WORLD'S ONLY 1440 DPI COLOR INK JET PRINTERS.

EPSON Stylus® Color 600 just $299. Photo Quality for home and office.

EPSON Stylus Color 800 just $449. High-performance business printer.

PC WORLD

# TOP 20 BUDGET DESKTOPS

| | SYSTEMS | Last month | Month tested | Street price (4/15/97) | CPU | Comments |
|---|---|---|---|---|---|---|
| 1 | Dell Dimension XPS M166s<br>800/388-8542 www.dell.com | – | NEW | $2299 | Pentium MMX-166 | Speedy, very big hard drive, good graphics, top reliability rating. |
| 2 | Micron Millennia LXA P166<br>888/634-8799 www.micronpc.com | 3 | Jan 97 | $1499 | Pentium-166 | $150 price drop moves fast PC up a notch; support is among the best. |
| 3 | Dell Dimension M200a<br>800/388-8542 www.dell.com | 2 | June 97 | $2179 | Pentium MMX-200 | Quick, well-rounded, high reliability rating. |
| 4 | Dell OptiPlex GS+ 200L<br>800/388-8542 www.dell.com | 5 | June 97 | $2018 | Pentium-166 | $80 price slide keeps this corporate compact in Best Buy ranks. |
| 5 | Micron Home MPC P200<br>888/634-8799 www.micronpc.com | – | Mar 97 | $2448 | Pentium-200 | Good family software bundle; now $201 cheaper. |
| 6 | Quantex QP6/200 SM-1<br>800/896-4898 www.quantex.com | 12 | Aug 96 | $1999 | Pentium Pro-200 | Loaded, fastest PC on chart for under $2000, great home machine. |
| 7 | IBM PC 350 (Pentium-166)<br>800/426-2968 www.pc.ibm.com | 4 | Dec 96 | $1992 | Pentium-166 | IBM's PC reliability slips to fair, pulling this corporate PC from Best Buy ranks. |
| 8 | Gateway 2000 P5-166<br>800/846-2000 www.gw2K.com | 7 | Feb 97 | $2099 | Pentium-166 | Includes large, very sharp monitor and fast modem; $100 price drop. |
| 9 | Gateway 2000 P5-200<br>800/846-2000 www.gw2K.com | – | June 97 | $2499 | Pentium MMX-200 | $120 price cut puts former Power system on Budget chart. Fastest here. |
| 10 | HP Pavilion 5320<br>800/724-6631 www.hp.com | 8 | June 97 | $1848 | Pentium-150 | On slow side but very reliable; comes with good software bundle. |
| 11 | HP Vectra VE 5/133<br>800/752-0900 www.hp.com | 10 | Dec 96 | $1705 | Pentium-133 | Corporate PC's price drops $34; Unified Memory Architecture slows it down. |
| 12 | Midwest Micro MWH-200<br>800/728-8582 www.mwmicro.com | – | Feb 97 | $2029 | Pentium-200 | Reliability rating improves to fair, price drops $70 to help move PC onto chart. |
| 13 | Kingdom 6x86 P166+ Super Value<br>800/385-3436 www.kingdomcomputers.com | 9 | May 97 | $1297 | Cx6x86-P166+ | Least expensive PC here; comes with 16X CD-ROM drive but no modem. |
| 14 | CyberMax Cyrix Max C3 P166+<br>800/443-9868 www.cybmax.com | 11 | Feb 97 | $1499 | Cx6x86-P166+ | Fastest PC here under $1500, but support hours are relatively short. |
| 15 | Quantex QP5/200MMX SM-3<br>800/896-4898 www.quantex.com | 20 | Mar 97 | $2349 | Pentium MMX-200 | Fast, loaded; reliability rating improves—but only to fair. |
| 16 | CyberMax Max I6/P200MMX<br>800/443-9868 www.cybmax.com | – | NEW | $2199 | Pentium MMX-200 | Very fast, but support hours are limited. |
| 17 | DirectWave MVP P-133<br>800/882-8108 www.directwave.com | 13 | Oct 96 | $1549 | Pentium-133 | Well built, multimedia, fastest P-133 on chart; support hours limited. |
| 18 | Polywell Poly 5000X<br>800/999-1278 www.polywell.com | 14 | June 97 | $1598 | AMD K5-PR166 | P-200-level speed for peanuts; little known of Polywell's service, reliability. |
| 19 | Vektron Home Office P133<br>800/725-0026 www.vektron.com | – | Mar 97 | $1345 | Pentium-133 | $100 cut on very low-cost PC; a little slow; has limited support. |
| 20 | Tangent MediaGem<br>800/342-9388 www.tangent.com | – | Sept 96 | $1895 | Pentium-200 | Fast P-200 has built-in speakers and video input; tech support hours are short. |

Best Buy See features chart, page 226; performance chart, page 228. Recommended as home system

[1] To order fax copies of system reviews, call 800/434-4495 from a touch-tone phone and use your credit card. You can order next month's reviews in advance: Power Desktops, Budget Desktops, or Notebook PCs Top 20 charts and capsule reviews ($9.95, available June 25).

YOU CAN HAVE YOUR MMX AND SAVE MONEY, TOO. Two of our budget Best Buys, including the top-rated Dell Dimension XPS M166s, are based on Pentium MMX chips. AST's Advantage 9413, an MMX-200, missed the Top 20 because of poor reliability and service ratings, but it's the fastest budget desktop we've ever tested. Its WorldBench score of 236 falls only 5 points behind that of the new Polywell K6200Mx minitower that placed 20th on the Power Desktops chart, and puts the system ahead of most Pentium Pro-200s we've tested. To read about the Advantage and other PCs that didn't make the cut—seven of the nine are based on the MMX processor—visit PC World Online (www.pcworld.com/t20pcsnaps).

## SCORECARD

| ★ Overall rating | Price | Vendor's system reliability | Features and design | PC WorldBench score/performance | Vendor's support quality/policies | Fax reprint number[1] | Reader service number |
|---|---|---|---|---|---|---|---|
| 85 | expensive | best | very good | 223/very good | best/best | – | 698 |
| 85 | inexpensive | good | good | 200/good | best/best | 3473 | 699 |
| 85 | expensive | best | very good | 219/very good | best/best | 3537 | 700 |
| 80 | average | best | satisfactory | 198/good | best/best | 3538 | 701 |
| 80 | expensive | good | very good | 216/very good | best/best | 3496 | 702 |
| 80 | average | fair | very good | 224/very good | good/best | 3405 | 703 |
| 79 | average | fair | outstanding | 197/good | good/best | 3468 | – |
| 79 | average | fair | very good | 199/good | best/best | 3539 | 704 |
| 79 | expensive | fair | very good | 233/outstanding | best/best | 3540 | 705 |
| 78 | average | best | good | 180/good | good/fair | 3541 | 706 |
| 78 | average | best | good | 166/satisfactory | good/poor | 3465 | 707 |
| 77 | average | fair[2] | very good | 210/very good | good[2]/fair | 3542 | 708 |
| 77 | inexpensive | [3] | good | 197/good | [3]/good | 3543 | 709 |
| 77 | inexpensive | [3] | good | 205/good | [3]/good | 3544 | 710 |
| 76 | expensive | fair | very good | 221/very good | good/best | 3497 | 711 |
| 76 | expensive | [3] | very good | 230/very good | [3]/good | – | 712 |
| 76 | inexpensive | [3] | very good | 194/good | [3]/best | 3439 | 713 |
| 75 | average | [3] | good | 213/very good | [3]/good | 3545 | 714 |
| 75 | inexpensive | [3] | good | 188/good | [3]/fair | 3504 | 715 |
| 75 | average | [3] | very good | 220/very good | [3]/fair | 3423 | 716 |
| Scorecard weightings ▶ | Price 25 percent | Reliability 25 percent | Features 20 percent | Performance 15 percent | Support 15 percent | All products: | 909 |

[2] Limited data; score is based on responses for this company and average of all companies. [3] Insufficient data.

# This Month's Best Buys

## 1 DELL DIMENSION XPS M166S

**PRO:** Terrific speed, great reliability and support

**CON:** Relatively high price

If you're shopping for a home office system that gives you the most for your money, put the XPS M166s on your short list. It's superfast (its PC WorldBench score is 223), comes with a set of components that reads like a Who's Who of our Top 10 charts, and is backed by excellent support. No PC is without its weak points, but this has only one: a relatively high $2299 price.

Using a less expensive graphics board is one way that Dell could have cut the cost —the 15-inch monitor is too small to take full advantage of the ultrahigh resolutions possible with the 4MB Matrox Millennium graphics card. Even so, the XPS M166s is a superb deal. It comes with a spacious 4.3GB hard drive and a U.S. Robotics Sportster Voice modem, one of the more highly rated modems *PC World* has tested. The 33.6-kbps Sportster is voice-enabled, which means that if you use the included Vocal Point voice/fax/data software, your computer can double as an answering machine.

Dell Dimension XPS M166s

Its software bundle makes this PC a nice choice for a small business or home office. Besides the Vocal Point communications package, Dell includes Microsoft Office Small Business Edition, which lacks the PowerPoint presentation program but has Publish 97, Small Business Financial Manager, and Automap Streets. Dell's Dimension PCs are backed by a three-year warranty on parts and one year of free labor, and toll-free support is available 24 hours a day. The company continues to earn top marks for service and reliability in our reader fax-back surveys.

## 2 MICRON MILLENNIA LXA P166

**PRO:** Alluring price, well built

**CON:** None significant

The $1499 LXA P166, $150 less than it cost last month, is a bargain corporate computer. This Pentium-166 is faster than the average for its CPU class. The included Diamond Stealth 3D 2000 video card brims with a hefty 4MB of EDO DRAM, and multimedia is good, including a fast 12X CD-ROM drive and a pair of Advent AV2706 speakers. Besides 24-hour-a-day technical support, Micron offers a three-year parts and one-year labor warranty, plus a year of free on-site service. Readers have been reporting long hold times for support, but once through they get great help. They are also satisfied with the reliability of Micron computers. ▶

Micron Millennia LXA P166

## TOP 20 BUDGET DESKTOPS — STANDARD FEATURES

| | SYSTEMS | CPU | RAM (MB) | Secondary cache (K) | Hard drive (GB) | Graphics adapter | Video RAM (MB/type) | Monitor tube/ viewable diagonal (inches) | Screen pitch (mm) | CD-ROM drive speed |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dell Dimension XPS M166s* | Pentium MMX-166 | 32 | 512 | 4.3 | Matrox Millennium | 4/WRAM | 15/13.8 | .28 | 12X |
| 2 | Micron Millennia LXA P166* | Pentium-166 | 16 | 512 | 2.1 | Diamond Stealth 3D 2000 | 4/EDO DRAM | 15/13.5 | .28 | 12X |
| 3 | Dell Dimension M200a* | Pentium MMX-200 | 16 | 256 | 2.1 | integrated S3 | 2/DRAM | 15/13.6 | .28 | 12X |
| 4 | Dell OptiPlex GS+ 200L* | Pentium-166 | 32 | 256 | 2.1 | integrated | 2/VRAM | 15/14 | .28 | 8X |
| 5 | Micron Home MPC P200* | Pentium-200 | 32 | 512 | 3.1 | Diamond Stealth 3D/Monster 3D | 4/EDO DRAM | 17/16 | .26 | 12X |
| 6 | Quantex QP6/200 SM-1 | Pentium Pro-200 | 32 | 256 | 2.5 | STB Lightspeed 12B | 2/MDRAM | 17/16 | .26 | 12X |
| 7 | IBM PC 350 (Pentium-166) | Pentium-166 | 16 | 256 | 1.3 | integrated S3 Trio64V+ | 2/EDO DRAM | 15/13.7 | .28 | 6X |
| 8 | Gateway 2000 P5-166 | Pentium-166 | 16 | 256 | 2.5 | ATI Rage 3D | 2/SGRAM | 17/15.9 | .25 | 12X |
| 9 | Gateway 2000 P5-200 | Pentium MMX-200 | 32 | 512 | 3.8 | S3 Virge 3D | 4/VRAM | 17/15.9 | .28 | 12X |
| 10 | HP Pavilion 5320 | Pentium-150 | 16 | 256 | 1.6 | integrated | 2/EDO DRAM | 15/13.8 | .28 | 8X |
| 11 | HP Vectra VE 5/133 | Pentium-133 | 16 | 256 | 1.1 | integrated SiS 6205 | 2/EDO DRAM | 15/14 | .28 | 8X |
| 12 | Midwest Micro MWH-200 | Pentium-200 | 16 | 512 | 3.2 | STB Lightspeed 12B | 2/MDRAM | 15/13.8 | .28 | 12X |
| 13 | Kingdom 6x86 P166+ Super Value | Cx6xB6-P166+ | 16 | 256 | 2.1 | PCI-60V | 2/EDO DRAM | 15/13.8 | .28 | 16X |
| 14 | CyberMax Cyrix Max C3 P166+ | Cx6xB6-P166+ | 24 [3] | 512 | 2.1 | STB Lightspeed 12B | 4/MDRAM | 15/13.8 | .28 | 12X |
| 15 | Quantex QP5/200MMX SM-3 | Pentium MMX-200 | 32 | 512 | 3.2 | Matrox Mystique | 4/SGRAM | 17/16.1 | .28 | 12X |
| 16 | CyberMax Max I6/P200MMX | Pentium MMX-200 | 32 | 512 | 4.3 | Diamond Stealth 3D 2000 | 4/EDO DRAM | 17/15.7 | .26 | 12X |
| 17 | DirectWave MVP P-133 | Pentium-133 | 16 | 512 | 1.6 | Diamond Stealth 3D 2000 | 4/EDO DRAM | 17/14.3 | .28 | 8X |
| 18 | Polywell Poly 500QX | AMD K5-PR166 | 32 | 512 | 2.5 | Diamond Stealth 3D 2000 | 2/EDO RAM | 15/13.8 | .28 | 12X |
| 19 | Vektron Home Office P133 | Pentium-133 | 16 | 256 | 2.5 | Matrox Mystique | 2/SGRAM | 15/14.1 | .26 | 16X |
| 20 | Tangent MediaGem | Pentium-200 | 32 | 512 | 2.1 | STB Lightspeed 12B | 2/MDRAM | 17/15.6 | .28 | 8X |

* Best Buy [1] Five years on CPU and main RAM, three years on other parts. [2] Toll call. [3] Tested with 24MB of RAM; now sold with 32MB.

### 3 DELL DIMENSION M200A

**PRO:** Excellent service and support

**CON:** Slow for an MMX-200, monitor a little dull

With a PC WorldBench score of 219, this MMX-200 minitower is only slightly faster than the average MMX-166 system. But at $2179, this lively home computer costs $400 less than the average for its processor class and comes with an appealing set of components: a roomy 2.1GB hard drive, a 12X CD-ROM drive, a 33.6-kbps voice modem with Vocal Point phone/fax/data software, and Microsoft Office Small Business Edition. Unfortunately, the 15-inch LS monitor that came with our test unit is not Dell's best; the picture lacks sharpness.

Dell Dimension M200a

The M200a is easy to upgrade, and its interior is clean. Dell's documentation continues to be a model to follow, complete with charts, illustrations, index, and glossary. If the troubleshooting guide can't help, Dell provides 24-hour-a-day toll-free phone support that readers rate very highly in our ongoing fax-back survey.

### 4 DELL OPTIPLEX GS+ 200L

**PRO:** Built-in networking; great service, reliability

**CON:** Thin feature set, limited expandability

This slim $2018 compact desktop, down $80 from June, is the entry-level system in Dell's network-ready corporate PC line. The OptiPlex GS+ 200L is a good choice for the business buyer looking for a low-cost machine that offers a space-saving design and built-in ethernet connectivity.

Dell OptiPlex GS+ 20C

This P-166's PC WorldBench score of 198 is a little low these days, and most of its components are quickly becoming entry-level. But the 15-inch Dell monitor has as clear a display as you'll find in that size, and extras include a good pair of Altec Lansing speakers and Microsoft Office Professional.

Dell continues to get the highest ranking for reliability and support in our fax-back surveys, and offers top-notch policies, including round-the-clock support.

| | | EXPANDABILITY | | | | | | CUSTOMER SUPPORT | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Modem speed (kbps) | Sound board | Case style | Max. RAM (MB) | Maximum secondary cache (K) | Open RAM sockets | Open drive bays (ext./int.) | Open slots | Warranty for parts/labor (years) | Weekday toll-free support (hours) | Weekend support | Online support |
| 33.6 | Sound Blaster 16 | minitower | 64 | 512 | 1 | 3/1 | 4 | 3/1 | 24 | Sat., Sun. | BBS, CIS, WWW |
| – | integrated | minitower | 128 | 512 | 2 | 3/1 | 6 | 3 [1]/1 | 24 | Sat., Sun. | CIS, WWW |
| 33.6 | Sound Blaster 16 | minitower | 64 | 512 | 1 | 3/1 | 6 | 3/1 | 24 | Sat., Sun. | BBS, CIS, WWW |
| – | Sound Blaster 16 | compact | 128 | 256 | 2 | 0/0 | 2 | 3/1 | 24 | Sat., Sun. | BBS, CIS, WWW |
| 33.6 | Sound Blaster AWE32 | minitower | 128 | 512 | 2 | 3/1 | 3 | 3 [1]/1 | 24 | Sat., Sun. | CIS, WWW |
| 33.6 | Ensoniq Soundscape Vivo 90 | minitower | 128 | 256 | 0 | 2/1 | 3 | 3/1 | 24 | Sat., Sun. | BBS, WWW |
| – | – | desktop | 192 | 512 | 4 | 1/1 | 4 | 3/3 | 24 | Sat., Sun. | AOL, BBS, CIS, WWW |
| 33.6 | integrated | minitower | 128 | 512 | 1 | 2/2 | 5 | 3/3 | 24 | Sat., Sun. | AOL, BBS, CIS, MSN, WWW |
| 33.6 | Ensoniq Soundscape Vivo 90 | minitower | 64 | 512 | 1 | 3/2 | 3 | 3/3 | 24 | Sat., Sun. | AOL, BBS, CIS, MSN, WWW |
| 33.6 | integrated | desktop | 128 | 256 | 2 | 1/0 | 3 | 1/1 | 24 [2] | Sat., Sun. | AOL, BBS, CIS, WWW |
| – | Sound Blaster 16 PnP | desktop | 192 | 256 | 4 | 1/1 | 3 | 3/3 | 11 [2] | – | AOL, BBS, CIS, WWW |
| 33.6 | Sound Blaster AWE64 PnP | minitower | 128 | 512 | 4 | 3/2 | 3 | 3/3 | 12 | Sat. | BBS, WWW |
| – | ESS ES1868 | tower | 128 | 512 | 3 | 3/3 | 5 | 3/1 | 13 | Sat. | WWW |
| 33.6 | Ensoniq Soundscape Vivo 90 | minitower | 128 | 512 | 0 | 3/2 | 4 | 3/1 | 12 | Sat. | BBS, WWW |
| 33.6 | Ensoniq Soundscape Vivo 90 | minitower | 128 | 512 | 2 | 2/1 | 4 | 3/1 | 24 | Sat., Sun. | BBS, WWW |
| 33.6 | Ensoniq Soundscape Vivo 90 | minitower | 128 | 512 | 2 | 2/2 | 3 | 3/1 | 12 | Sat. | BBS, WWW |
| 33.6 | Sound Blaster AWE32 | minitower | 256 | 512 | 2 | 3/0 | 3 | 3/3 | 11 | Sat. | BBS, WWW |
| 33.6 | Supersound Origins 30 | minitower | 128 | 512 | 4 | 3/0 | 4 | 3/5 | 11 | Sat. | BBS, WWW |
| 33.6 | Sound Blaster 16 | minitower | 128 | 256 | 2 | 3/0 | 3 | 1/1 | 11 | Sat. | BBS, CIS, WWW |
| – | Sound Blaster 32 PnP | desktop | 512 | 512 | 6 | 1/1 | 6 | 3/3 | 10.5 | – | BBS, WWW |

## 5 MICRON HOME MPC P200

**PRO:** Fast, large 3.1GB hard drive, 33.6-kbps modem, big software bundle, excellent service

**CON:** Expensive for a budget home PC

The system doesn't look like a lot of today's funky, contoured home PCs. But Micron's Home MPC P200 has the goods it takes to light up a home office or family fun center.

All the cool extras add up—$2448 is a lot for budget-conscious families to shell out. This system didn't even qualify for our Budget chart until its $201 price drop this month. But the Home MPC P200 includes a roomy 3.1GB Western Digital drive, and the fast 33.6-kbps Supra fax-modem comes with speakerphone support. Gamers will appreciate the new 4MB Diamond Monster 3D add-in card and subwoofer-equipped speaker system, which generates realistic 3-D graphics and sounds, as well as the Microsoft Gamepad for enjoying bundled software like Monster Truck Madness and Mech Warrior 2. Micron also includes Microsoft Office and Quicken, plus some kids games. This Pentium-200 minitower is fast as well as full-featured. Its WorldBench score of 216 puts it a few points ahead of the average system for its processor class.

Micron Home MPC P200

Micron backs its home PC with an extensive three-year warranty, and gets a good rating for PC reliability and high praise for support quality.

# New This Month

The following PC made our Budget Desktops chart for the first time this month. For original reviews of previously tested PCs on the chart, visit our Web page (www.pcworld.com/t20pcs).

## 16 CYBERMAX MAX I6/P200MMX

**PRO:** Fast, great features, big software bundle

**CON:** Expensive, manual could be more readable

The $2199 CyberMax I6/P200MMX is a good home PC candidate and one of the few systems we've reviewed with an Easy Photo drive for scanning snapshots. However, CyberMax's support hours are more suited to business than home users—12 hours a day, with none on Sundays.

This machine is one of the fastest on the Budget Desktops chart. You get a long ▶

list of name-brand peripherals, including a 4MB Diamond Stealth graphics card, Altec Lansing speakers and subwoofer, and an Ensoniq Soundscape wavetable-equipped sound board. The system's compact speakers have punch—the sound is so crisp it's almost harsh. CPI's Viva CommCenter 33.6-kbps phone/fax/data modem, with Microsoft Phone software, also comes in the box. You won't need to worry about running out of disk space—the 4.3GB hard drive will satisfy most users. CyberMax backs its systems with a typical three-year parts, one-year labor warranty and a year of on-site service.

CyberMax I6/P200MMX

## Beyond the Top 20

We evaluated these systems along with the others, but they didn't score high enough to reach the Top 20 Budget Desktops chart. For write-ups, see PC World Online (www.pcworld.com/t20pcsnaps).

- AST Advantage 9413
- CLR Infinity PD5-LX
- DTK Quin 55m/p P-166
- DTK Quin 57M/PM 200
- Kingdom Pentium MMX 200 Home & Office
- Micro Express Micro Flex-MMX/2000
- Monorail PC Model 133
- Nexar MMX P-200
- Premio Apollo Pro 200

## TOP 20 BUDGET DESKTOPS

PERFORMANCE

| | SYSTEMS | CPU | RAM (MB) | Secondary cache (K) | PC WorldBench score |
|---|---|---|---|---|---|
| 1 | Dell Dimension XPS M166s* | Pentium MMX-166 | 32 | 512 | 223 |
| 2 | Micron Millennia LXA P166* | Pentium-166 | 16 | 512 | 200 |
| 3 | Dell Dimension M200a* | Pentium MMX-200 | 16 | 256 | 219 |
| 4 | Dell OptiPlex GS+ 200L* | Pentium-166 | 32 | 256 | 198 |
| 5 | Micron Home MPC P200* | Pentium-200 | 32 | 512 | 216 |
| 6 | Quantex QP6/200 SM-1 | Pentium Pro-200 | 32 | 256 | 224 |
| 7 | IBM PC 350 (Pentium-166) | Pentium-166 | 16 | 256 | 197 |
| 8 | Gateway 2000 P5-166 | Pentium-166 | 16 | 256 | 199 |
| 9 | Gateway 2000 P5-200 | Pentium MMX-200 | 32 | 512 | 233 |
| 10 | HP Pavilion 5320 | Pentium-150 | 16 | 256 | 180 |
| 11 | HP Vectra VE 5/133 | Pentium-133 | 16 | 256 | 166 |
| 12 | Midwest Micro MWH-200 | Pentium-200 | 16 | 512 | 210 |
| 13 | Kingdom 6x86 P166+ Super Value | Cx6x86-P166+ | 16 | 256 | 197 |
| 14 | CyberMax Cyrix Max C3 P166+ | Cx6x86-P166+ | 24 | 512 | 205 |
| 15 | Quantex QP5/200MMX SM-3 | Pentium MMX-200 | 32 | 512 | 221 |
| 16 | CyberMax Max I6/P200MMX | Pentium MMX-200 | 32 | 512 | 230 |
| 17 | DirectWave MVP P-133 | Pentium-133 | 16 | 512 | 194 |
| 18 | Polywell Poly 500QX | AMD K5-PR166 | 32 | 512 | 213 |
| 19 | Vektron Home Office P133 | Pentium-133 | 16 | 256 | 188 |
| 20 | Tangent MediaGem | Pentium-200 | 32 | 512 | 220 |

*Best Buy

Application test times in minutes

Word 7.0 for Windows 95 · Excel 7.0 for Windows 95 · Picture Publisher 6.0 for Windows 95 · Paradox 5.0 for Windows · WordPerfect 6.1 for Windows · 1-2-3 release 5 for Windows

**HOW WE TEST** All systems are tested with PC WorldBench, PC World's application-based benchmark. A higher PC WorldBench score is better. All PCs have Windows 95, and video resolution is set to 800 by 600 in 256 colors. We run automated scripts on six popular business applications, performing common tasks such as spelling checks, scrolls, saves, sorts, and recalculations. The PC WorldBench score is a sum of the weighted result of each script: Word (25 percent), Excel (20 percent), Picture Publisher (15 percent), Paradox (15 percent), WordPerfect (15 percent), and 1-2-3 (10 percent). For more details on our benchmark and how we run it, see PC World Online (www.pcworld.com/testing).

# THE BEST MONITORS ON THE PLANET, AT DOWN-TO-EARTH PRICES.

## See For Yourself Why The Experts Choose iiyama.

Leading editors, tech authorities, and independent labs around the world have one thing in common: they consistently award iiyama's line of VisionMaster monitors such prestigious titles as Editors Choice, Best Price/Performance, and Expert Pick. In fact, they've done it 96 times. They've noted the line's sleek, compact designs, leaving more room on the desktop. They've commented on their high resolution and blazing fast refresh rates that make it easier than ever to work. They've raved about their easy-to-use on-screen controls. And they've praised iiyama's full 3-year parts and labor warranty – the best in the business. You'd think such high caliber products would merit equally high price tags.

**$649 ESP**
MT-9017E

| Selected models from our complete product line | | | | |
|---|---|---|---|---|
| Model/ Viewable Area | Dot Pitch Horiz. Scan | Max. Horiz. Scan Rate | Refresh Rate | ESP |
| 21" MT-9021E (19.5" vis) | .30mm Aperture Grille | 94 kHz | 76 Hz (1600 x 1200) | $1,519 |
| 17" MT-9017E (16" vis) | .25mm Aperture Grille | 92 kHz | 72 Hz (1600 x 1200) | $649 |

But you'll find plenty of innovation here too, as iiyama offers some of the best values on the market.

Take a closer look at the best line of monitors on the planet. Call toll-free for the name of your local dealer, or stop by our Web site for more information.

WINNER OF 96 INTERNATIONAL AWARDS

**iiyama®**

West: 1-800-594-7480 • East: 1-800-313-4335
www.iiyama.com

*Dealer inquiries invited.*

**Circle 108 on reader service card**

"I was
surprised to
my accoun
CDW

# learn how much Marcus, manager at CDW®, knows about compatibility

## and what's going to work with my system ” and what's not.

Experience is the best teacher. And your CDW account manager has in-depth, hands-on experience with a lot of products from a lot of different manufacturers. It's part of his ongoing training.

So once he gets to know you, your company's purchase history, and your system, he can help you find the optimal match. In fact, it's downright shocking what he can do for the productivity of your system. And your company. As well as save you a lot of time, money and aggravation.

### Get more than just a great price.

For example, he'll turn you on to product options that might be more productive or economical for your company. Get you the **free tech support** you need before you need it. And, of course, line up the right price for you.

So give us a call. We'll set you up with your own compatibility expert. A technically-trained business computer specialist you can count on day after day.

That way, your company not only gets our huge selection of brand-name products like **IBM®**, **Compaq®**, **Hewlett-Packard®**, **Toshiba®** and **Microsoft®** at the right prices, in stock, ready for overnight delivery, and easy credit. You'll also get someone who can help you make the most of it. And some honest, friendly, professional advice that will save you more than money.

### Call today and get hooked up with some free advice, and a free CDW catalog.

Check out some of our products and prices in the back of the magazine. Then give us a call. We'll send you our latest catalog. Or check us out at **www.cdw.com**. You'll see where optimal computer performance, productivity, and compatibility really begin. With your CDW account manager's compatibility with you.

CDW COMPUTER DISCOUNT WAREHOUSE™

**The right price.**
**The right advice.**

**800-767-4239** See our ad in the back

Circle 44 on reader service card

Copyright 1997 by CDW Computer Centers, Inc.

PC WORLD

# TOP 20 NOTEBOOK PCs

| | POWER NOTEBOOKS | Last month | Month tested | Street price (4/15/97) | CPU | Comments |
|---|---|---|---|---|---|---|
| 1 | Dell Latitude LM M166ST<br>800/388-8542 www.dell.com | 1 | June 97 | $3999 | Pentium MMX-166 | Fastest on chart, long battery life, big hard drive; one-year parts warranty. |
| 2 | Dell Latitude XPi P133ST<br>800/388-8542 www.dell.com | 2 | Aug 96 | $2799 | Pentium-133 | $200 price cut; very good battery life and trackball but no CD-ROM drive. |
| 3 | WinBook LM<br>800/965-9349 www.winbookcorp.com/ | 3 | May 97 | $3199 | Pentium-133 | Fast, long battery life; keyboard could be better. |
| 4 | Transmonde Vibrant 133T<br>888/988-2882 www.transmonde.com | 4 | June 97 | $2999 | Pentium-133 | Speedy, terrific battery life, interesting design; support policies limited. |
| 5 | WinBook FX<br>800/965-9349 www.winbookcorp.com/ | 6 | May 97 | $3599 | Pentium-133 | Sturdy, with comfortable keyboard and large hard drive. |
| 6 | Gateway 2000 Solo 2100 S5-150<br>800/846-2000 www.gw2K.com | 9 | Apr 97 | $3749 | Pentium MMX-150 | Quick, loaded Pentium MMX, but weighs almost 9 pounds. |
| 7 | HP OmniBook 800CT<br>800/322-4772 www.hp.com/go/omnibook | 7 | Mar 97 | $3240 | Pentium-133 | Very small and light, decent speed and battery life; no CD-ROM or modem. |
| 8 | Dell Latitude XPi CD M166ST<br>800/388-8542 www.dell.com | – | NEW | $4818 | Pentium MMX-166 | Very fast, has an excellent keyboard; pricey, on the hefty side. |
| 9 | Compaq Presario 1080<br>800/652-6672 www.compaq.com | 10 | June 97 | $4499 | Pentium MMX-166 | Sleek, audiophiles will like it; heavy, expensive, 90 days on-site service. |
| 10 | ARM TS96CD-133T<br>408/935-9800 www.armcomputer.com | – | Feb 97 | $2799 | Pentium-133 | Inexpensive for a power notebook, and fast, but support policies are limited. |
| | **BUDGET NOTEBOOKS** | | | | | |
| 1 | Compaq Armada 1130T<br>800/652-6672 www.compaq.com | 3 | Apr 97 | $1399 | Pentium-120 | Very steep $600 cut makes this the most affordable active-matrix notebook. |
| 2 | HP OmniBook 5500CS<br>800/322-4772 www.hp.com/go/omnibook | 1 | Jan 97 | $1620 | Pentium-100 | Low cost for a good all-around notebook; CD-ROM drive is $375 extra. |
| 3 | WinBook XP5 Pro P150<br>800/965-9349 www.winbookcorp.com/ | 6 | June 97 | $2599 | Pentium-150 | Fastest on budget chart, comes with vivid screen, modem, CD-ROM drive. |
| 4 | Hitachi E133T/1000<br>800/555-6820 www.hitachipc.com | – | June 97 | $1999 | Pentium-133 | Big $400 drop, comes with nice screen and modem; no CD-ROM drive. |
| 5 | CTX EzBook 720CS<br>800/888-9052 www.ctxintl.com | 8 | May 97 | $1499 | Pentium-120 | $200 price drop, comes with game pad and headphones. |
| 6 | Toshiba Satellite Pro 430CDS<br>800/457-7777 www.computers.toshiba.com | – | NEW | $1999 | Pentium-120 | On portly side, but has an excellent keyboard, fast CD-ROM drive. |
| 7 | Gateway 2000 Solo 2100 S5-120<br>800/846-2000 www.gw2K.com | 9 | Jan 97 | $2099 | Pentium-120 | $200 drop, second-fastest on budget chart; lackluster battery life. |
| 8 | AcerNote Light 382<br>800/733-2237 www.acer.com/aac/ | – | NEW | $1999 | Pentium-150 | Fast, best battery life on the chart; case feels a bit flimsy. |
| 9 | Mega Image Megabook 880<br>800/250-1876 www.megai.com | 10 | Feb 97 | $1549 | Pentium-100 | $100 price drop, very affordable, but slower than a P-75. |
| 10 | Toshiba Satellite 200CDS<br>800/457-7777 www.computers.toshiba.com | – | NEW | $1599 | Pentium-100 | Low-cost entry-level corporate notebook, comes with 24-hour support; slow. |

Best Buy See features chart, page 234; performance chart, page 238.

[1] Includes computer, adapter, power cord, floppy drive, and CD-ROM drive if notebook has one. [2] To order fax copies of system reviews, call 800/434-4495 from a touch-tone phone and use your credit card. You can order next month's reviews in advance: Power Desktops, Budget Desktops, or Notebook PCs Top 20 charts and capsule reviews ($9.95, available June 25).

Notebooks are getting ever better at multimedia. Most of the Top 20 notebooks this month come with sound, speakers, and 6X or faster CD-ROM drives, and four systems on the Power chart sport Pentium MMX processors. Of the new machines that didn't make the chart, Digital's HiNote VP 575 came the closest, but its appealing feature set, terrific WorldBench score of 209, and 6.5-hour battery life were overshadowed by meager support policies and a $4499 price. For reviews of the HiNote and other portables, visit PC World Online (www.pcworld.com/t20pcsnaps).

## SCORECARD

| ★ Overall rating | PC WorldBench score/ rating | Price | Vendor's system reliability | Features and design | Vendor's support quality/policies | Battery life (hours:min)/ rating | Traveling weight [1] | Fax reprint number [2] | Reader service number |
|---|---|---|---|---|---|---|---|---|---|
| 84 | 212/outstanding | average | average | very good | average/fair | 5:52/very good | heavy | 3834 | 717 |
| 84 | 166/good | very inexpensive | average | good | average/good | 5:20/very good | average | 3771 | 718 |
| 83 | 182/good | inexpensive | average | very good | average/fair | 5:46/very good | heavy | 3831 | 719 |
| 83 | 190/very good | inexpensive | average | outstanding | below average/poor | 6:19/outstanding | very heavy | 3835 | 720 |
| 82 | 188/very good | average | average | very good | average/fair | 4:15/good | heavy | 3832 | 721 |
| 82 | 199/very good | average | average | outstanding | below average/fair | 3:12/good | heavy | 3815 | 722 |
| 81 | 168/good | inexpensive | average [3] | good | [4]/poor | 4:07/good | light | 3811 | 723 |
| 81 | 199/very good | very expensive | average | outstanding | average/good | 4:35/good | heavy | – | 724 |
| 80 | 197/very good | expensive | average | very good | above average/fair | 5:02/very good | heavy | 3836 | 725 |
| 80 | 183/good | very inexpensive | [4] | good | [4]/poor | 3:43/good | heavy | 3837 | 726 |
| Power scorecard weightings ▶ | Performance 22 percent | Price 14 percent | Reliability 22 percent | Features 16 percent | Support 10 percent | Battery life 8 percent | Weight 8 percent | | |
| 84 | 140/good | very inexpensive | average | good | above average/fair | 3:57/good | average | 3820 | 727 |
| 82 | 152/very good | inexpensive | average [3] | good | [4]/poor | 4:00/good | average | 3807 | 728 |
| 78 | 183/outstanding | expensive | average | very good | average/fair | 3:24/good | average | 3838 | 729 |
| 78 | 126/good | average | [4] | good | [4]/good | 3:55/good | average | 3839 | 730 |
| 78 | 167/very good | inexpensive | [4] | satisfactory | [4]/poor | 4:28/good | heavy | 3833 | 731 |
| 78 | 141/good | average | average | good | below average/fair | 4:10/good | heavy | – | 732 |
| 77 | 171/very good | average | average | good | below average/fair | 2:15/satisfactory | average | 3805 | 733 |
| 77 | 170/very good | average | below average | good | [4]/fair | 6:45/outstanding | average | – | 734 |
| 77 | 87/poor | inexpensive | [4] | satisfactory | [4]/fair | 2:47/satisfactory | average | 3840 | 735 |
| 76 | 91/satisfactory | inexpensive | average | satisfactory | below average/fair | 3:51/good | heavy | – | 736 |
| Budget scorecard weightings ▶ | Performance 14 percent | Price 22 percent | Reliability 22 percent | Features 16 percent | Support 10 percent | Battery life 8 percent | Weight 8 percent | All products: | 910 |

[3] Limited data; score is based on responses for this company and average of all companies. [4] Insufficient data.

POWER NOTEBOOKS

# This Month's Best Buys

## 1 DELL LATITUDE LM M166ST

**PRO:** Blazing speed, big bright screen

**CON:** Heavy, no modem

The Latitude LM M166ST is aimed at business users looking for a notebook that has a lot of the performance and features they find in their desktops. Packing a Pentium MMX-166 chip and a whopping 40MB of RAM, this powerful portable earned a PC WorldBench score of 212—faster than some of the desktop MMX-166 systems we've tested. The price for all this power is a reasonable $3999, which includes a big software bundle: Microsoft Office Small Business Edition; the LapLink file transfer and remote control utility; and Sidekick 95, a personal information manager.

Dell Latitude LM M166ST

Seasoned travelers may balk at the Latitude's hefty 9.2 pounds, which in- ▶

## TOP 20 NOTEBOOK PCs — STANDARD FEATURES

| | POWER NOTEBOOKS | CPU | Traveling weight (pounds)[1] | RAM (MB) | Hard drive (MB) | Color screen type | Screen diagonal (inches) | Screen resolution | Maximum screen colors | Battery type | Pointing device |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Dell Latitude LM M166ST* | Pentium MMX-166 | 9.2 | 40 | 2160 | active | 12.1 | 800 x 600 | 65,536 | lithium ion | touchpad |
| 2 | Dell Latitude XPi P133ST* | Pentium-133 | 7.2 | 24 | 1215 | active | 11.3 | 800 x 600 | 256 | lithium ion | trackball |
| 3 | WinBook LM | Pentium-133 | 8.6 | 16 | 1083 | active | 12.1 | 800 x 600 | 65,536 | lithium ion | touchpad |
| 4 | Transmonde Vibrant 133T | Pentium-133 | 10.4 | 32 | 1440 | active | 12.1 | 800 x 600 | 65,536 | NiMH | touchpad |
| 5 | WinBook FX | Pentium-133 | 9.4 | 32 | 2167 | active | 12.1 | 800 x 600 | 65,536 | lithium ion | eraserhead |
| 6 | Gateway 2000 Solo 2100 S5-150 | Pentium MMX-150 | 8.8 | 40 | 1300 | active | 12.1 | 800 x 600 | 65,536 | lithium ion | touchpad |
| 7 | HP OmniBook 800CT | Pentium-133 | 6.6 | 16 | 1440 | active | 10.4 | 800 x 600 | 256 | lithium ion | mouse |
| 8 | Dell Latitude XPi CD M166ST | Pentium MMX-166 | 9 | 32 | 2160 | active | 12.1 | 800 x 600 | 65,536 | lithium ion | trackball |
| 9 | Compaq Presario 1080 | Pentium MMX-166 | 8.8 | 16 | 1440 | active | 12.1 | 800 x 600 | 65,536 | lithium ion | touchpad |
| 10 | ARM TS96CD-133T | Pentium-133 | 8.8 | 16 | 1358 | active | 12.1 | 800 x 600 | 65,536 | lithium ion | touchpad |
| | BUDGET NOTEBOOKS | | | | | | | | | | |
| 1 | Compaq Armada 1130T* | Pentium-120 | 7.5 | 16 | 1080 | active | 10.4 | 800 x 600 | 256 | NiMH | trackball |
| 2 | HP OmniBook 5500CS* | Pentium-100 | 8 | 16 | 1358 | dual-scan | 11.3 | 800 x 600 | 65,536 | lithium ion | eraserhead |
| 3 | WinBook XP5 Pro P150 | Pentium-150 | 8.4 | 16 | 1083 | active | 11.3 | 800 x 600 | 256 | lithium ion | eraserhead |
| 4 | Hitachi E133T/1000 | Pentium-133 | 7.6 | 16 | 1083 | active | 11.3 | 800 x 600 | 256 | NiMH | touchpad |
| 5 | CTX EzBook 720CS | Pentium-120 | 9.8 | 16 | 1084 | dual-scan | 12.1 | 800 x 600 | 65,536 | NiMH | touchpad |
| 6 | Toshiba Satellite Pro 430CDS | Pentium-120 | 8.8 | 16 | 1358 | dual-scan | 11.3 | 800 x 600 | 65,536 | lithium ion | eraserhead |
| 7 | Gateway 2000 Solo 2100 S5-120 | Pentium-120 | 8.2 | 16 | 810 | dual-scan | 11.3 | 800 x 600 | 256 | NiMH | touchpad |
| 8 | AcerNote Light 382 | Pentium-150 | 8.4 | 16 | 1400 | dual-scan | 11.3 | 800 x 600 | 256 | NiMH | touchpad |
| 9 | Mega Image Megabook 880 | Pentium-100 | 7.6 | 16 | 1358 | active | 10.3 | 800 x 600 | 65,536 | NiMH | trackball |
| 10 | Toshiba Satellite 200CDS | Pentium-100 | 9.2 | 8 | 772 | dual-scan | 11.3 | 800 x 600 | 65,536 | NiMH | eraserhead |

*Best Buy ● Yes ○ No [1] Includes computer, adapter, power cord, floppy drive, and CD-ROM drive if notebook has one. [2] Toll call.

cludes an AC adapter and a removable 10X CD-ROM drive. But its battery life is good—in our tests, the lithium ion pack lasted nearly 6 hours. The keyboard is comfortable and quiet, and moving the pointer on the screen with the touchpad is hassle-free. Text is sharp and graphics are brilliant on the 12.1-inch active-matrix screen. The built-in stereo speakers provide adequate sound.

Dell's documentation is superb, but support policies are only fair: Although the company offers nonstop phone support, it covers its Latitude LM systems for only one year. Readers responding to our monthly fax-back survey give Dell average marks for service and system reliability.

## 2 DELL LATITUDE XPI P133ST

**PRO:** Very inexpensive, excellent battery life

**CON:** No internal CD-ROM drive option, small hard drive, no modem

If you don't need a CD-ROM drive in your power notebook, then the $2799 Dell Latitude XPi P133ST—down $200 from last month—is your best choice. It's slower than the Latitude LM M166ST, its top-ranking speedster sibling, but its PC WorldBench score of 166 is better than average for a Pentium-133. The XPi's 5.3-hour battery life is very good—though a little shorter than that of the LM—and at 7.2 pounds, it weighs 2 pounds less. If you're planning to load a lot of programs and files on your PC, however, get a larger hard drive than the supplied 1.2GB unit. A modem costs extra.

The crisp 11.3-inch active-matrix screen has a maximum 800 by 600 resolution, typical of today's power notebooks. Bundled software includes the LapLink file transfer and remote control program, and Sidekick 95, a personal information manager.

Dell gets an average rating for both service and notebook reliability.

Dell Latitude XPi P133ST

| | | EXPANDABILITY | | | | | CUSTOMER SUPPORT | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CD-ROM drive speed | Modem speed (kbps) | Maximum RAM (MB) | Modular expansion bays | Bay for second battery | Optional docking station | Infrared port | Warranty for parts/labor (years) | Weekday toll-free support (hours) | Weekend support | Online support |
| 10X | – | 72 | 1 | ● | ○ | ● | 1/1 | 24 | Sat., Sun. | AOL, BBS, CIS, WWW |
| – | – | 40 | 0 | ○ | ● | ● | 3/1 | 24 | Sat., Sun. | AOL, BBS, CIS, WWW |
| 6X | 28.8 | 40 | 1 | ● | ● | ● | 1/1 | 13 | Sat. | BBS, WWW |
| 6X | 33.6 | 64 | 1 | ○ | ○ | ● | 1/1 | 11 | – | WWW |
| 8X | 33.6 | 40 | 1 | ● | ● | ● | 1/1 | 13 | Sat. | BBS, WWW |
| 8X | 33.6 | 40 | 1 | ● | ● | ● | 1/1 | 24 | Sat., Sun. | BBS, WWW |
| – | – | 48 | 0 | ○ | ● | ● | 3/3 | 12 | – | AOL, BBS, CIS, WWW |
| 10X | 33.6 | 80 | 0 | ○ | ○ | ● | 3/1 | 24 | Sat., Sun. | AOL, BBS, CIS, WWW |
| 10X | 33.6 | 48 | 0 | ○ | ○ | ○ | 1/1 | 24 | Sat., Sun. | AOL, BBS, CIS, WWW |
| 10X | – | 40 | 1 | ● | ● | ● | 1/3 | 10.5 | Sat. | AOL, BBS, WWW |
| – | – | 48 | 0 | ○ | ○ | ○ | 1/1 | 24 | Sat., Sun. | AOL, BBS, CIS, WWW |
| – | – | 64 | 1 | ● | ● | ● | 3/3 | 12 | – | AOL, BBS, CIS, WWW |
| 8X | 28.8 | 40 | 1 | ● | ● | ● | 1/1 | 13 | Sat. | BBS, WWW |
| – | 28.8 | 40 | 1 | ● | ● | ● | 1/1 | 24 | Sat., Sun. | BBS, WWW |
| 6X | – | 72 | 2 | ● | ● | ● | 1/1 | 10 | – | WWW |
| 10X | – | 48 | 1 | ○ | ● | ● | 1/1 | 24 | Sat., Sun. | BBS, CIS, WWW |
| 8X | – | 40 | 1 | ● | ● | ● | 1/1 | 24 | Sat., Sun. | BBS, WWW |
| 10X | – | 64 | 0 | ○ | ○ | ○ | 1/1 | 24 | Sat., Sun. | AOL, BBS, CIS, WWW |
| – | – | 40 | 0 | ○ | ● | ● | 1/1 | 24 | Sat. | BBS, WWW |
| 6X | – | 40 | 1 | ○ | ● | ● | 1/1 | 24 | Sat., Sun. | BBS, CIS, WWW |

# New This Month

The following PC made our Power Notebooks chart for the first time this month. For original reviews of previously tested PCs on the chart, visit our Web page (www.pcworld.com/t20pcs).

## 8 DELL LATITUDE XPI CD M166 ST

**PRO:** Very fast, great keyboard and pointing device, internal CD-ROM and floppy drives

**CON:** Expensive, bulky

Dell's new top-of-the-line Latitude XPi CD M166 ST is one of the best desktop replacements we've seen. At 9 pounds, this Pentium MMX-166 multimedia notebook may seem too heavy and bulky to some frequent travelers, while others will be put off by its $4818 price. But this Latitude is very fast, outperforming most Pentium-166 desktops we've tested, and it's one of only a few portables that contain both internal CD-ROM and floppy drives. The 2GB hard disk is about as big as they come in notebooks. And in our standard rundown test, the battery lasted more than 4.5 hours.

Dell XPi CD M166ST

The machine's ergonomics are excellent. We rarely come across such an easy-to-use keyboard and pointing device. Despite their light touch, the keys provide a reassuring click, and the pointing device made us wonder why trackballs are losing ground to trackpads and mini–stick pointers.

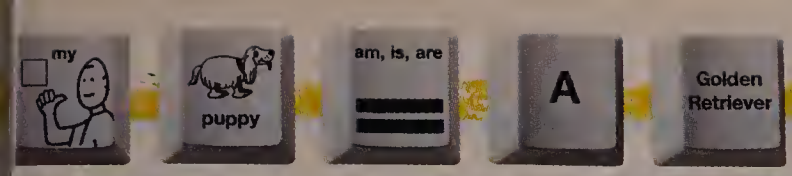
We do have a couple of beefs about this Latitude XPi, besides its heft and high price. It comes with excellent documentation, both printed and on-screen, but the latter is a little out-of-date; it assumes, for example, that this model uses a Pentium-150 processor. Also, you'd think that for the price Dell could throw in business-oriented software such as Microsoft Office or Lotus SmartSuite. Instead, the bundle includes CyberJack 7.0 (a suite of Internet tools), and Microsoft BookShelf 95, but no productivity applications. ▶

# Christian Murphy was non-verbal. He lived with a wall between himself and the world.

1 THIS IS CHRISTIAN.

*He can see, hear, feel, touch, but he cannot speak. He was born with autistic tendencies that cut him off from the world around him.*

MultiSync is a registered trademark and A500, A700, E500, E700, E1100, CromaClear and "Expect more. Experience more." mark and icon are trademarks of NEC Technologies, Inc. All other trademarks or registered trademarks are the property of their respective holders. ©1997 NEC Technologies, Inc.



**2** A TEACHER DISCOVERED *that Christian would respond to images from his life. She put visual cues to the story of his new puppy on a special keyboard.*

*NEC MultiSync Monitors*
*E and A Series*

**3** THE MONITOR BECAME HIS OICE. *With it he makes 'ass reports and conversa- on. With it, Christian, 11, as been in the regular 'sterville, MA public school nce first grade.*

## Until he found this window.

**4** WITH THE PICTURES, HE MADE SENTENCES. *With the sentences, he made friends. Christian's monitor is the window between his non-verbal world and the speaking world of his friends. Through it, he teaches them many things.*

THE MONITORS THAT ARE BEST FOR CHRISTIAN'S NEEDS *can also speak to yours. Introducing the NEC MultiSync® Enterprise and Advanced Series, the monitors for people looking for superior, lifelike images. And the monitors for people who want the kind of flexibility that super high resolutions and refresh rates ensure.*

*OSM™ (On-Screen Manager) controls make image adjustments easy. Plus, select Enterprise monitors feature CROMACLEAR™ CRT, for unparalleled focus, contrast and intense color saturation. And, of course, the industry-leading NEC warranty includes 3 years parts, labor and CRT.*

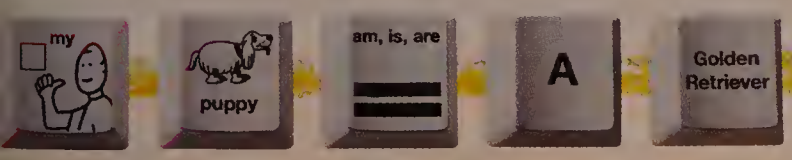
*For more information on the new performance-driven MultiSync Enterprise and value-oriented Advanced Series call 1-800-NEC-INFO or visit www.nec.com.*

MULTISYNC® MONITORS

| | Max Res | Bandwidth | CRT Type | Pitch |
|---|---|---|---|---|
| A500 | 1280 x 1024 @ 60Hz | 112MHz | Dot Trio | 0.28mm dot |
| A700 | 1280 x 1024 @ 65Hz | 119MHz | Dot Trio | 0.28mm dot |
| E500 | 1280 x 1024 @ 65Hz | 119MHz | CROMACLEAR | 0.25mm mask |
| E700 | 1600 x 1200 @ 65Hz | 177MHz | CROMACLEAR | 0.25mm mask |
| E1100 | 1600 x 1200 @ 65Hz | 177MHz | Dot Trio | 0.28mm dot |

Expect more. Experience more.

NEC




Circle 205 on reader service card

All things considered, however, the Latitude is a very worthy notebook. According to our fax-back survey, Dell notebook users are generally happy with their PCs' reliability and with the technical support the company provides, and Dell's policies are very good: a three-year warranty on parts and one year on labor, free on-site service for the first year, and around-the-clock technical support.

BUDGET NOTEBOOKS

## This Month's Best Buys

### 1 COMPAQ ARMADA 1130T

**PRO:** Crisp display, low cost, very sturdy, fast

**CON:** No multimedia features or modem

If you want a rugged portable with good performance at a terrific price, the $1399 Armada 1130T fits the bill. Compaq slashed the price on it by $600, putting the Armada at the head of this month's budget notebooks chart.

Compaq Armada 1130

Make no mistake, this portable is no-frills—there is no multimedia, no modem, and no infrared port, and its 1080MB hard drive is a little cramped by today's standards. Even ▶

## TOP 20 NOTEBOOK PCs — PERFORMANCE

| | POWER NOTEBOOKS | CPU | RAM (MB) | Secondary cache (K) | PC WorldBench score |
|---|---|---|---|---|---|
| 1 | Dell Latitude LM M166ST* | Pentium MMX-166 | 40 | 256 | 212 |
| 2 | Dell Latitude XPi P133ST* | Pentium-133 | 24 | 256 | 166 |
| 3 | WinBook LM | Pentium-133 | 16 | 256 | 182 |
| 4 | Transmonde Vibrant 133T | Pentium-133 | 32 | 256 | 190 |
| 5 | WinBook FX | Pentium-133 | 32 | 256 | 188 |
| 6 | Gateway 2000 Solo 2100 S5-150 | Pentium MMX-150 | 40 | 256 | 199 |
| 7 | HP OmniBook 800CT | Pentium-133 | 16 | 256 | 168 |
| 8 | Dell Latitude XPi CD M166ST | Pentium MMX-166 | 32 | 256 | 199 |
| 9 | Compaq Presario 1080 | Pentium MMX-166 | 16 | 256 | 197 |
| 10 | ARM TS96CD-133T | Pentium-133 | 16 | 256 | 183 |
| | **BUDGET NOTEBOOKS** | | | | |
| 1 | Compaq Armada 1130T* | Pentium-120 | 16 | 0 | 140 |
| 2 | HP OmniBook 5500CS* | Pentium-100 | 16 | 256 | 152 |
| 3 | WinBook XP5 Pro P150 | Pentium-150 | 16 | 256 | 183 |
| 4 | Hitachi E133T/1000 | Pentium-133 | 16 | 0 | 126 |
| 5 | CTX EzBook 720CS | Pentium-120 | 16 | 256 | 167 |
| 6 | Toshiba Satellite Pro 430CDS | Pentium-120 | 16 | 0 | 141 |
| 7 | Gateway 2000 Solo 2100 S5-120 | Pentium-120 | 16 | 256 | 171 |
| 8 | AcerNote Light 382 | Pentium-150 | 16 | 256 | 170 |
| 9 | Mega Image Megabook 880 | Pentium-100 | 16 | 0 | 87 |
| 10 | Toshiba Satellite 200CDS | Pentium-100 | 8 | 0 | 91 |

*Best Buy

Word 7.0 for Windows 95 · Excel 7.0 for Windows 95 · Picture Publisher 6.0 for Windows 95 · Paradox 5.0 for Windows · WordPerfect 6.1 for Windows · 1-2-3 release 5 for Windows

**HOW WE TEST** All systems are tested with PC WorldBench, PC World's application-based benchmark. A higher PC WorldBench score is better. All PCs have Windows 95, and video resolution is set to 800 by 600 in 256 colors. We run automated scripts on six popular business applications, performing common tasks such as spelling checks, scrolls, saves, sorts, and recalculations. The PC WorldBench score is a sum of the weighted result of each script: Word (25 percent), Excel (20 percent), Picture Publisher (15 percent), Paradox (15 percent), WordPerfect (15 percent), and 1-2-3 (10 percent). For more details on our benchmark and how we run it, see PC World Online (www.pcworld.com/testing).

# *Get the new Lexmark printer instead of an HP? Why should I stick my neck out?*

**Performance and value so outstanding, you'll rethink your next printer purchase — introducing the Lexmark Optra S laser printers.**

*It's no secret HP® is the customary choice. But for the last six years at Lexmark, we've listened closely to your needs. And created a whole new line of 1200 dpi printers with the quality, reliability and innovations you've been looking for. Introducing the Optra™ S laser printers.*

***HP compatible.*** *PCL® 6 and PostScript Level 2 emulations are included in every Optra S printer at no extra charge. And, right out of the box, all major network environments are supported.*

***Faster than HP.*** *On the toughest, most complex jobs, Lexmark's exclusive dynamic controller architecture delivers throughput up to two times faster than HP's comparably equipped 12, 16 and 24 ppm printers.*

***More adaptable than HP.*** *With the Lexmark Optra S, you can easily add extra paper trays for more capacity. Or snap on a duplexer for two-sided printing. Combine these useful features with your choice of 12, 16 and 24 ppm models and it's like designing your own printer.*

***More value than HP.*** *Lexmark's exclusive MarkVision™ software lets you see on your PC screen when your toner or paper is low. So you won't run out while printing an important job. What's more, the Optra S printer handles labels, transparencies and card stock. Enabling you to print a wide variety of documents all from the same Optra S. To learn more about why we're head and shoulders above HP, call 1-800-LEXMARK or visit us at www.lexmark.com.*

*A bold new breed of performance printers.*

PRINT LEXMARK™

© 1997 Lexmark International, Inc. All rights reserved. Lexmark and Lexmark with diamond design, MarkVision and Optra are trademarks of Lexmark International, Inc. registered in the United States and/or other countries. Print Lexmark is a trademark of Lexmark International, Inc. HP and PCL are registered trademarks of Hewlett-Packard Company. Other trademarks are property of their respective owners.

**Circle 141 on reader service card**

so, you get a remarkable amount of notebook for the money. The system cranked out a PC WorldBench score of 140, very good for a Pentium-120 with 16MB of RAM. It's also the least expensive notebook we've seen with a color active-matrix screen—it's small at 10.4 inches, but offers bright, vivid 800 by 600 resolution. Compaq also bundled Microsoft Works 4.0, which integrates common business tasks such as word processing and spreadsheet work into one program.

The Armada's keys have crisp, lively action, and they're comfortably sized and well spaced. Unlike most new notebooks, the Armada features a trackball input device rather than a touchpad. Although small, the trackball made moving the cursor effortless. The two mouse buttons are so big that some people will need time to get used to them.

With a 7.5-pound traveling weight, the Armada 1130T is light and quite small. If you need to compute on the go, it has a good battery life of nearly 4 hours. The Armada series comes with well-written documentation. Compaq provides just a one-year warranty on this budget unit, but *PC World* readers in our fax-back survey give the company a very good rating for support and are generally pleased with the reliability of its notebooks.

## 2 HP OMNIBOOK 5500CS

**PRO:** Low cost, good battery life, high-speed infrared port, helpful documentation

**CON:** Dual-scan screen somewhat washed out, CD-ROM drive is optional

With both a nice PC WorldBench performance of 152 and a low $1620 price, HP's recently introduced OmniBook is a great deal in a basic notebook aimed at the corporate market.

The 5500CS is the fastest P-100 notebook we've tested and relatively long-winded: It lasted 4 hours in our battery tests. It also has one unusual high-end perk: a high-speed infrared port (4 megabits per second), which makes wireless LAN connections practical.

HP OmniBook 5500CS

We have a few beefs. We were relatively satisfied with the supplied 1358MB hard drive, but the notebook's price doesn't include a CD-ROM drive, and screen quality wasn't as good as we would have liked—as with many dual-scan displays, we had a tough time finding the cursor. Finally, HP's lack of weekend support pulls down its policies score, and weekday toll-free support is just 12 hours daily.

Even with these drawbacks, the OmniBook remains a very good value. HP backs its notebook for three years for both parts and labor. While we haven't received enough responses in our fax-back survey to rate HP's service quality on its notebooks, we've seen enough to suggest that readers are satisfied with their reliability.

# New This Month

The following PCs made our Budget Notebooks chart for the first time this month. For original reviews of previously tested PCs on the chart, visit our Web page (www.pcworld.com/t20pcs).

## 6 TOSHIBA SATELLITE PRO 430CDS

**PRO:** Low price, very comfortable keyboard, good battery life

**CON:** Somewhat bulky, pale screen, small software bundle

The Satellite series of notebooks, including the 200CDS reviewed below, is Toshiba's entry-level product line; the Satellite Pro line is designed for people looking for a little more in a budget corporate notebook who don't mind spending accordingly. Compared with the 200CDS, the $1999 Satellite Pro 430CDS, for example, adds considerably more power (a PC WorldBench score of 141), RAM, and hard disk space, as well as a faster (10X) CD-ROM drive. This Pentium-120 notebook is still no speed demon, but it handles word processing and moderate spreadsheet and database tasks quite well. Its keyboard has an unusually comfortable feel for a notebook—the keys are very quiet and feel much like those on standard desktop keyboards.

The 430CDS has a few drawbacks, most notably with its 11.3-inch dual-scan screen. The pointer disappears briefly when you move it quickly across the screen, and the colors on this 800 by 600 panel look pale compared with those on the increasingly prevalent active-matrix screens. The screen can also make it difficult to work in varying light conditions, such as in a window seat on a flight. But you probably will not want to carry the machine around all the time, anyway. It weighs just over 8.8 pounds and is a little bulkier than most notebooks, measuring almost a foot wide and well over 2 inches thick.

Toshiba Pro 430CDs

Multimedia on the 430CDS is uneven. It comes with a fast 10X CD-ROM drive, but you have to either run it as an external drive bay, or swap out the floppy drive. (Swapping drives went very smoothly in our experience.) The unit has only one speaker, but it comes with a pair of Koss earphones that produce rich sound, and there's a convenient thumbwheel volume control on the front panel. Other niceties include MPEG I support, which lets you watch remarkably smooth video on the screen, and a Zoom Video slot, which accepts a PC Card adapter that can bring full motion video into your notebook. If you start collecting lots of multimedia files, however, you'll soon want a larger hard drive than the supplied 1.4GB unit.

The 430CDS doesn't come with much software. It includes several utilities, including TransXit's file synchronization package, but no games or productivity programs. We were more pleased, however, by the unit's battery life—this notebook chugged along for 4 hours and 10 minutes in our rundown test. We were also impressed with the documentation. The printed user's guide is comprehensive and clearly written, with many diagrams, and the on-screen manual has lots of easily searchable information. If the documentation doesn't answer your questions, you can call a technician at any time. Toshiba backs its Satellite Pro systems with a brief one-year parts and labor warranty. *PC World* readers responding to our fax-back survey say that Toshiba's ▶

# If your Ethernet•Modem fails, then what are you?

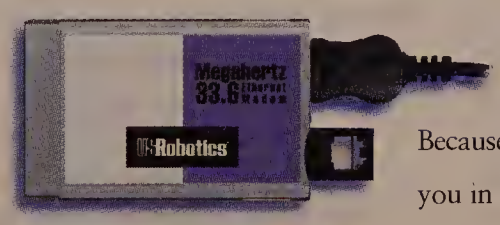
## Settle for an unreliable combo card, and you could take some heat.

At U.S. Robotics®, we realize the last thing you need from a PC Card is hassles. That's why we offer PC Cards known for solid connections and innovation. And we include features like our patented XJACK® connector, so you don't need to carry (or lose) a proprietary cable. And since frying a modem has the same effect on your nerves, our Digital Line Guard warns you before a digital PBX can sizzle your circuitry.

No matter where you roam, you still need to stay in touch. No problem — Direct Connect Cellular with Cable Sensor automatically configures your modem for a cellular connection.

Put simply, Megahertz® PC Cards are the most reliable on the market. It's why we can offer such generous support and a money-back guarantee.

Learn more about today's most reliable PC Cards and our complete line of information access products. Visit our Web site at www.USR.com/mobileusr. Or call 1-800 LINKING, EXT. 4312. Because choosing anything less could leave you in a jam.




U.S.Robotics®

SPECTRUM Connected™

©1997 U.S. Robotics Mobile Communications Corp. Portions of this product are covered by U.S. Patent Nos. 5,183,404, 5,336,099, 5,338,210, 5,574,401, and 5,532,898, property of U.S. Robotics Mobile Communications Corp. U.S. Robotics, the USRobotics logo, Megahertz and XJACK are registered trademarks of U.S. Robotics and U.S. Robotics Mobile Communications Corp. SPECTRUM Connected is a trademark of Spectrum Information Technologies, Inc.

**Circle 238 on reader service card**

notebooks continue to be reliable and its support still a little deficient.

If you like the 430CDS but want a better screen, you have a couple of options. The first is the Satellite Pro 430CDT. It didn't make the budget chart because of its relatively high $2699 price, but it's very similar to this unit and has a sharp active-matrix screen. The other is the next-generation Satellite Pro 440CDX, whose 12.1-inch screen is based on a new passive-screen technology called High Contrast Addressing Display. Based on our brief preview of this Pentium-133 notebook, the HCAD appeared to have richer colors, more contrast, and faster refresh rates that most dual-scan screens. The 440CDX should be available by the time this review is off the press.

## 8 ACERNOTE LIGHT 382

**PRO:** Terrific battery life, very fast, nice screen for a dual-scan, round-the-clock support

**CON:** Case a little flimsy, no bundled apps

If money is tight, take a hard look at Acer's new AcerNote Light 382, a Pentium-150 portable that costs only $1999. Its somewhat flimsy case may not hold up to constant travel as well as those of some other notebooks, but this is a nice multimedia portable for people on a budget.

The AcerNote Light 382 excels in two ways: performance and battery life. It ran up a 170 PC WorldBench score, ahead of the average of all P-166 notebooks we've reviewed, and making it the fastest you can buy for under $2000. And its battery life extended to a very lengthy 6.75 hours.

There's a lot else to like about the AcerNote, too. Although the screen is dual-scan, at first it was hard to distinguish from an active-matrix model. It's exceptionally bright and readable even at an angle, and the pointer stays in view during most normal mousing tasks. The pair of speakers, mounted at the screen hinges, sound a bit tinny but still offer richer audio than you'll find from most notebooks. The AcerNote Light is a decent multimedia machine, with a 16-bit sound card and internal 10X CD-ROM drive, and the 1GB hard drive offers a bit of breathing room for large media files. The floppy drive is strictly external—you can't swap it with the CD-ROM drive—but you can connect it to the AcerNote through a cable without having to turn the notebook on and off. The only bundled software, however, is Windows 95.

AcerNote Light 382

We found the AcerNote Light relatively easy to use, but you should give it a typing test before you buy it. We had to type firmly—but not uncomfortably so—on the keyboard, which is so quiet you won't annoy your seatmates on red-eye flights. The built-in touchpad has a nifty scrolling feature. Running your finger down an inside edge of the pad scrolls the document you're in, and you can stop the scrolling with a finger tap. It works very well after a little practice. The trackpad was hypersensitive at first, but we clicked on the pointing-device control icon on the Taskbar and followed the excellent instructions to tune it.

Support policies are only fair. Technical support is available around the clock, but the AcerNote Light 382 is covered by only a one-year warranty. Our fax-back survey indicates that Acer notebooks have below-average reliability.

## 10 TOSHIBA SATELLITE 200CDS

**PRO:** Terrific price, good battery life, 24-hour tech support, online documentation

**CON:** Small amount of RAM and hard drive space, no applications, heavy

If your computing needs and budget are modest, this Pentium-100 notebook is an attractive choice in a good basic corporate notebook. With only 8MB of RAM and an 772MB hard drive, the 200CDS is no desktop replacement. But its $1599 price is tough to beat, especially for a sturdy, well-made multimedia notebook with a 6X CD-ROM drive.

For such a low price, it's not surprising to find other drawbacks besides limited memory and a small hard drive. The Satellite 200CDS doesn't come with any software at a time when more and more vendors are including applications with their notebooks.

Toshiba Satellite 200CDS

What's surprising is how much notebook you do get for the money. With a PC WorldBench score of 91, the 200CDS is pretty slow by today's standards, but it's still fine for word processing and moderate spreadsheet work. The 200CDS's keyboard has snappy, responsive keys and is a pleasure to use, and the headphone jack and CD volume control are conveniently located on the front panel. The 11.3-inch screen is one of the better dual-scans we've seen. Its colors are relatively bright, with a minimum of shadowing, and text is razor sharp. Another feature that's bound to please is the built-in AC adapter, which means one less peripheral to bring along on a trip. If you do have to work away from wall power, you'll have juice for a while—we got nearly 4 hours of life in our rundown tests. Finally, good help is close at hand. The 200CDS comes with a well-written, illustrated on-screen manual that not only contains all the contents of the printed version but also is easily accessible and searchable.

In reliability and support, Toshiba puts in a mixed performance. According to our latest fax-back survey, readers are generally satisfied with the reliability of their Toshiba notebooks but find the company's support lacking. Its support policies are fair. While Toshiba covers parts and labor for only a year, support reps are available around the clock. ■

## Beyond the Top 20

We evaluated these systems along with the others, but they didn't score high enough to reach the Top 20 Notebook PCs chart. For write-ups, see PC World Online (www.pcworld.com/t20pcsnaps).

- 5D Technologies 5D 9750
- Acer TI TravelMate 7060
- Acer Extensa 660 CDT
- AMS TravelPro 2010CX
- ARM TS753CD-113D
- Digital HiNote VP 575
- LEK Technologies FutureNote 200MX
- Maxtech YesBook X753 Plus
- NEC Versa 6200MX
- Olivetti Echos P133S 800
- Toshiba Tecra 510 CDT

# How fast can you download with our x2™ Technology?

## Download nearly twice as fast as 28.8Kbps with Megahertz® PC Card modems.

U.S.Robotics X2 TECHNOLOGY.

Here's a flash for you. Presenting Megahertz® PC Card modems with x2™ Technology. Our latest innovation, x2 Technology is capable of downloading your information at up to 56Kbps* over standard phone lines.

By taking advantage of the existing digital phone network, x2 Technology gives modems a shot of adrenaline during downloads. So it's perfect for access with many leading ISPs and on-line services committed to x2 Technology.

Get 56Kbps from the start or buy our 33.6Kbps x2 upgradable PC Card and step up when you're ready. Either way, we'll provide you with a convenient upgrade to future 56Kbps ITU industry standards. It's just what you'd expect from U.S. Robotics®—the company known for solid connections and a complete line of information access products.

Shed more light on today's most exciting technology with our x2 Mobile Technology Brief. To get your copy, call 1-800 LINKING, EXT. 4313, or visit us at www.USR.com/mobileusr.

U.S.Robotics®

©1997 U.S. Robotics Mobile Communications Corp. All rights reserved. Portions of this product are covered by U.S. Patent Nos. 5,183,404, 5,336,099, 5,338,210, 5,574,401, and 5,532,898, property of U.S. Robotics Mobile Communications Corp. U.S. Robotics, the USRobotics logo, Megahertz and XJACK are registered trademarks and x2 and the x2 Logo are trademarks of U.S. Robotics and U.S. Robotics Mobile Communications Corp.

*Note: all x2 products are 56Kbps capable; however, due to FCC regulations which restrict power output, download speeds are limited to 53Kbps. Actual speeds may vary depending on line conditions. Uploads from users to service providers travel at speeds up to 28 8Kbps. An x2 capable modem, x2 compatible local analog phone line and x2 capable service provider are required for high speed downloads. See www.usr.com/x2 for details.

**Circle 232 on reader service card**

# Win an IBM PC 350

Have you ever contacted your PC maker for service and support? Or has your PC been trouble-free? Tell us about it! Fill out and fax in the questionnaire below—even if you have no problems to report, and even if you have responded to this survey before—and we'll enter you in a drawing to win an IBM PC 350, a Pentium-166 PC in this month's Top 20. Send in a separate copy of the survey for each of your PCs.

**HOW TO ENTER:** FOR BEST RESULTS, PHOTOCOPY THIS PAGE. Fax your completed survey to 415/357-4522. Do NOT fax a cover page. Or mail it to *PC World*, Box 7-SS, c/o 800-SCAN, 543 Howard St., San Francisco, CA 94105-3013. Surveys must be received by July 31.
**PRIZE:** One entry per person. IDG employees and their families are not eligible. One prize will be awarded through a random drawing. *PC World* will make reasonable efforts to contact winners by telephone and fax. If *PC World* is unable to do so within 30 days of the drawing, a new winner will be selected. No purchase necessary. Void where prohibited by law.
**HOW TO FILL OUT THE FORM:** Print your name (block capital letters) and your fax number, and fill the circles for each digit of your daytime phone number. Then fill out the questionnaire. AVOID GOING OUTSIDE THE LINES!

LAST, FIRST NAME

FAX NUMBER — —

ZIP CODE

**Please fill in your daytime phone number below.**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 5 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 9 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 0 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

**How did you get this copy of *PC World*?**
○ By subscription ○ On the newsstand ○ From someone else

## ABOUT YOUR PC

**Who is the manufacturer of the PC you use most frequently?**

○ Acer ○ Acma ○ ALR ○ Apple ○ AST ○ Austin (IPC) ○ Compaq ○ Compudyne ○ Comtrade ○ CTX ○ CyberMax ○ Dell
○ Diamond ○ Digital (DEC) ○ DTK ○ EPS ○ Epson ○ Everex ○ Fujitsu ○ Future Tech ○ Gateway 2000 ○ Hewlett-Packard ○ HiQ ○ Hitachi
○ Hyundai ○ IBM ○ Insight ○ Intelesys ○ Leading Edge ○ Micro Express ○ Micron ○ Midwest Micro ○ MIS ○ Nat'l Micro ○ NCR ○ NEC
○ Packard Bell ○ Panasonic ○ PerComp ○ Pionex ○ Polywell ○ Quantex ○ Robotech ○ Samsung ○ Sharp ○ Sony ○ Swan ○ Sys Tech.
○ Tangent ○ Texas Instruments ○ Toshiba ○ Twinhead ○ Unisys ○ USA Flex ○ Vektron ○ WinBook ○ Xi ○ Zenith (ZDS) ○ Zenon ○ Other

**What size is this PC?**
○ Desktop
○ Notebook/laptop
○ Handheld

**What is the CPU?**
○ PowerPC
○ Pentium
○ Pentium Pro
○ 80486
○ Other

**Where did you buy this PC?**
○ Local dealer
○ Mail/phone order
○ Direct from field sales force
○ Membership discount store
○ Computer superstore
○ Home electronics store
○ Retail store
○ Value-added reseller
○ Other

**After ordering, how long did it take to get your PC?**
○ Less than 1 week
○ 1-2 weeks
○ 3-4 weeks
○ More than 4 weeks

**Who set up your PC?**
○ Dealer/retailer/VAR
○ Staff computer technician
○ Self or coworker

**Where do you use this PC?** ○ At home/home office ○ At work ○ Both

## WHEN YOU FIRST GOT YOUR PC

**When did you buy this PC? (Specify month and year.)**

○ Jan ○ Feb ○ Mar ○ Apr ○ May ○ June ○ July ○ Aug ○ Sept ○ Oct ○ Nov ○ Dec
○ 92 ○ 93 ○ 94 ○ 95 ○ 96 ○ 97

**When you first set up your PC, were any components "dead on arrival" (DOA)?**
○ Yes ○ No ○ Don't know

**If so, which component was it? (Mark all that apply.)**
○ Battery ○ CD-ROM ○ CPU ○ Floppy drive
○ Graphics/video board ○ Hard drive ○ Keyboard ○ Memory
○ Modem/fax board ○ Monitor/screen ○ Motherboard ○ Mouse
○ Power supply ○ Sound board ○ Other

**Did your problem occur only after you added your own hardware or software?**
○ Yes ○ No ○ Don't know

**Would you buy this brand of PC again?**
○ Yes ○ No ○ Not sure

**How many times have you had a problem with this PC?**
○ No problem ever ○ One ○ Two ○ Three ○ Four ○ More than four

**If you have had a problem that you have not reported in a previous survey, please fill out the right column. If you are reporting a DOA for the first time, skip to the service section.**

## NEW PROBLEM REPORT

**Answer for the most recent problem—*other than DOA*—not reported in a prior surve**

**When did this problem occur? (Specify month and year.)**

○ Jan ○ Feb ○ Mar ○ Apr ○ May ○ June ○ July ○ Aug ○ Sept ○ Oct ○ Nov ○ Dec
○ 92 ○ 93 ○ 94 ○ 95 ○ 96 ○ 97

**How long after you purchased your PC did the problem occur?**
○ Less than 1 month ○ 1-3 months ○ 4-6 months ○ 7-12 months ○ More than 12 months ○ Not sure

**Did the problem occur as a result of adding new hardware or software?**
○ Yes ○ No ○ Don't know

**Did the problem occur under warranty?**
○ Yes ○ No ○ Don't know

**What was the problem finally identified as? (Mark all that apply.)**
○ Faulty component ○ Incorrectly installed software ○ Wrong configuration ○ Faulty peripheral ○ Device conflicts ○ OS problem ○ Other ○ Don't kno

**If a component failed, which one was it? (Mark all that apply.)**
○ Battery ○ CD-ROM ○ CPU ○ Floppy drive
○ Graphics/video board ○ Hard drive ○ Keyboard ○ Memory
○ Modem/fax board ○ Monitor/screen ○ Motherboard ○ Mouse
○ Power supply ○ Sound board ○ Other

## SERVICE

**Please use this section to describe the service and support you received for the problem reported above or the DOA reported at left.**

**Who fixed your PC?**
○ Manufacturer
○ Dealer/store where purchased
○ Manufacturer's authorized repair technician
○ Self ○ Other

**What types of service and support did you receive? (Mark all that apply.)**
○ Phone ○ On site ○ In store
○ System swap ○ Component swap ○ Factory return

**If you received phone service, how long were you on hold?**
○ Not at all ○ Less than 1 minute ○ 1-2 minutes ○ 3-5 minutes ○ 6-10 minutes ○ 11-20 minutes ○ More than 20 minutes

**How long did it take before you talked to the person who finally helped you?**
○ Less than 15 minutes ○ 15 minutes-1 hour ○ 2-5 hours ○ 6-10 hours ○ 11-24 hours ○ 1½-2 days ○ 3-5 days ○ 1 week or more

**How long did it take to resolve the problem completely?**
○ 1-2 days ○ 3-7 days ○ 8-14 days ○ 15-30 days ○ More than 1 month ○ Never resolved ○ Awaiting resolution

**Was it resolved to your satisfaction?**
○ Yes ○ No

**How would you rate the person(s) who helped you?**

| | Poor | | Good | | Excellent |
|---|---|---|---|---|---|
| Courtesy | ○ | ○ | ○ | ○ | ○ |
| Knowledge | ○ | ○ | ○ | ○ | ○ |
| Follow-through | ○ | ○ | ○ | ○ | ○ |

**Based on the service and support you received, would you buy this brand of PC again?**
○ Yes ○ No

**On the whole, how satisfied are you with the service and support you received?**
○ Not at all ○ ○ Satisfied ○ ○ Extremely satisfied

**PLEASE FAX TO 415/357-4522. FOR BEST RESULTS, PHOTOCOPY THIS PAGE.**

**Fast. Reliable.**
**Unlimited Internet access for only $19.95 a month***
**Return this card or Call 1 800 WORLDNET, ext. 106**
**for Free AT&T WorldNet℠ Service software.**

Name _____

Address _____ Apt.# _____

City _____ State _____ Zip _____

Home Phone _____ Business Phone _____

Are you an AT&T long distance customer? ___Yes or ___No
Do you own a ___Windows® 3.1x PC or ___Windows® 95 PC
___Macintosh® or ___Power Macintosh®?
Do you prefer a ___CD-ROM or ___Floppy Disk?

*Telephone access and other charges and taxes may apply. Other terms and conditions apply. ©1997. AT&T. All Rights Reserved.

Tear along dotted perforation.

AT&T

To run AT&T WorldNet Service on your IBM-compatible PC, you will need:

1. A 486SX processor or faster
2. Microsoft Windows® 3.1x, Windows® for Workgroups 3.11, or Windows® 95
3. 8MB RAM and 15-20MB of available hard disk space, depending on platform (some additional temporary space may be required during installation)
4. A modem connected to a phone line running at 14.4 kilobits per second or faster, but not to a Local Area Network (LAN) or ISDN line.

To run AT&T WorldNet Service on your Macintosh,® you will need:

1. Macintosh® running System 7.1 or higher or Power Macintosh® running System 7.5.3 Rev 2 or higher
2. Apple Open Transport 1.1+ (if using Open Transport)
3. 8MB RAM (or more for better performance) with Virtual Memory turned on, 13-20MB of available hard disk space, depending on platform
4. A modem connected to a phone line running at 14.4 kilobits per second or faster, but not to a Local Area Network (LAN) or ISDN line.

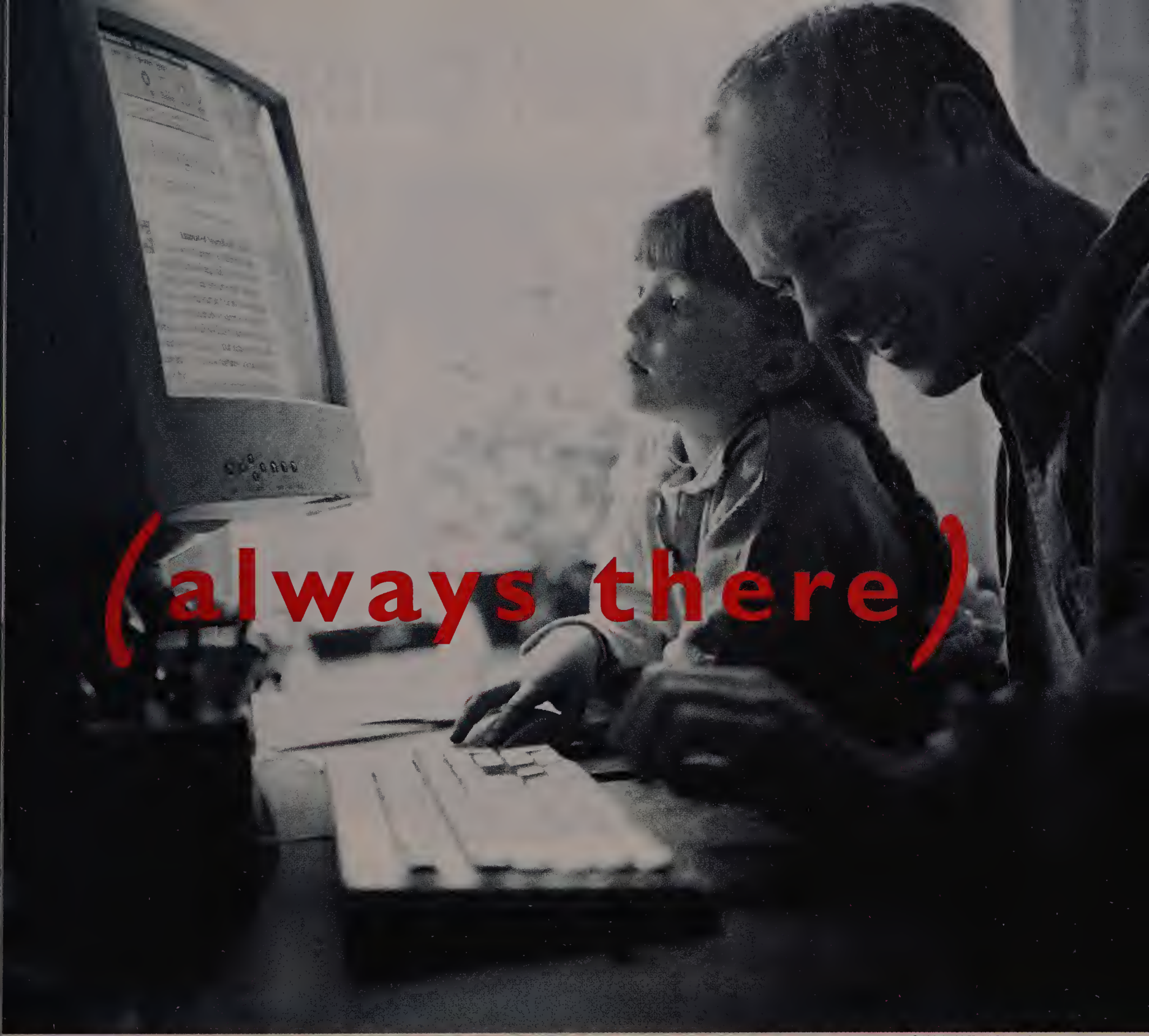
**1 800 WORLDNET, ext. 106**
**or www.att.net**

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

**BUSINESS REPLY MAIL**
FIRST-CLASS MAIL PERMIT NO. 1656 FARGO ND

POSTAGE WILL BE PAID BY ADDRESSEE

AT&T WorldNet℠ Service
Mail Stop #255
4325 13th Avenue SW
Fargo ND 58103-9872




ased on March '97 industry average of 13 major ISP's and online service providers tested. **Telephone access and other charges and taxes may apply. Other terms and conditions apply. ©1997. AT&T. All Rights Reserved

AT&T WorldNet℠ Service gets you on the Internet more reliably, outperforming the industry average
n getting you connected on your first try.* Wherever you choose to go, we're with you all the way.
Enjoy unlimited Internet access for just $19.95 a month.** With AT&T, it's all within your reach.

To order AT&T WorldNet Service software call 1 800 WORLDNET, ext. 106 Or download now
t www.att.net

AT&T

# Business' Choice

# Editors' Choice

*"We needed top-of-the-line 17" monitors that deliver the performance and features critical to our business... at a price to fit our bottom line. The Optiquest V775 is all that. And more."*

## Extraordinary Performance

Whether your company needs a large screen monitor for desktop publishing, graphics design, spreadsheets or multiple Windows® applications, one choice stands out: the Optiquest V775. This powerful 17" (16.0" viewable) monitor offers the specs and features you'd expect from much higher priced monitors, including an ultra fine 0.26mm dot pitch, Invar shadow mask, resolutions up to 1,600 x 1,280, intuitive OnView® controls, ARAG® screen treatment, Super Contrast screen and more. The payoff is luxuriously rich colors and sharp text for both PC and Mac® systems. You'll be impressed with the Optiquest V775 – the editors of PC Magazine certainly were.

| OPTIQUEST MONITORS | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Q100 | V775 | V773 | Q71 | V655 | Q53 | V641 |
| Size/Viewable | 20"/18.4" | 17"/16.0" | 17"/15.8" | 17"/16.0" | 15"/13.8" | 15"/13.8" | 14"/13.2" |
| Dot Pitch | 0.28mm | 0.26mm | 0.26mm | 0.28mm | 0.28mm | 0.28mm | 0.28mm |
| Max. Resolution | 1,600 x 1,280 | 1,600 x 1,280 | 1,280 x 1,024 | 1,280 x 1,024 | 1,280 x 1,024 | 1,280 x 1,024 | 1,024 x 768 |
| Horiz. Scan Freq. | 30-86kHz | 30-85kHz | 30-69kHz | 30-70kHz | 30-65kHz | 30-70kHz | 31.5/37.5/48.4kHz |
| MSRP | $1,149 | $699 | $599 | $559 | $339 | $319 | $229 |

Prices effective April 1, 1997

Corporate names and trademarks stated herein are property of their respective companies
Prices and specifications subject to change without notice
Copyright © 1997 ViewSonic Corporation. All rights reserved.

## Extraordinary Price

Now, if you're looking for a high performance 17" (16.0" viewable) monitor that's even more affordable, check out our award-winning Optiquest V773. In fact, both of these Optiquest® montors boast a 0.26mm dot pitch, surpass environmental requirements and include a limited three year warranty. **Call 800-THE-OPTI TODAY for additional product information; ask for agent 7487.**

***All business decisions should be this easy!***

**OPTIQUEST®**

*A ViewSonic® Company*

20480 Business Parkway, Walnut, CA 91789
**800-THE-OPTI**
FaxSonic (909) 869-7318 (24-hour fax-on-demand)
Internet:www.optiquest.com

HOME OFFICE COMPUTING BEST BUY
Optiquest V773
*April 1997*

PC WORLD TOP 10 MONITORS
Optiquest V655
*February 1997*

MacUser RATED
Optiquest V775
*December 1996*

PC MAGAZINE EDITORS' CHOICE™
Optiquest V775
*October 1996*

**Circle 246 on reader service card**

PC WORLD

# TOP 10 PRINTERS

| | MONOCHROME WORKGROUP PRINTERS | Month tested | Street price (4/2/97) | Overall rating | Speed for plain text (ppm) | Speed for full-page graphics (ppm) | Comments | Reader service number |
|---|---|---|---|---|---|---|---|---|
| 1 | Lexmark Optra S 1650<br>800/539-6275<br>www.lexmark.com | NEW | $1300 | 94 | 11.6 | 2.4 | **FEATURES:** 16-ppm laser. Standard 4MB of RAM; 600-by-600-dpi resolution (also true 1200 by 1200 dpi); 250 sheets input and output. **PRO/CON:** Extremely fast, easy to use, very good print quality. Universal Optra manual sometimes confuses differences between models. | 653 |
| 2 | Lexmark Optra S 1250<br>800/539-6275<br>www.lexmark.com | NEW | $1135 | 91 | 9.6 | 2.1 | **FEATURES:** 12-ppm laser. Standard 4MB of RAM; 600-by-600-dpi maximum resolution (also true 1200 by 1200 dpi); 250 sheets input and output. **PRO/CON:** Fast, easy to use, very good print quality. Fewer options than the Optra S 1650, and manual sometimes confuses differences between models. | 654 |
| 3 | HP LaserJet 5M<br>800/752-0900<br>www.hp.com | retested this month | $1799 | 91 | 9.6 | 1.9 | **FEATURES:** 12-ppm laser. Standard 6MB of RAM; 600-by-600-dpi maximum resolution; 250 sheets input and output. **PRO/CON:** Very good print quality and design; updated drivers produced faster text and graphics speeds. Expensive, but unlike other printers on the chart it includes ethernet and LocalTalk. | 655 |
| 4 | IBM Network Printer 12<br>800/358-6661<br>www.printers.ibm.com | Mar 97 | $1250 | 90 | 8.9 | 2.4 | **FEATURES:** 12-ppm laser. Standard 4MB of RAM; 600-by-600 dpi resolution; 250 sheets input, 270 output. **PRO/CON:** Very good print quality, easy-to-use control panel; support policies include 24-hour, 7-day technical help. Numerous manuals can be confusing; slowest text printer on chart. | – |
| 5 | Okidata OkiPage 16n<br>800/654-3282<br>www.okidata.com | NEW | $999 | 88 | 12.4 | 1.9 | **FEATURES:** 16-ppm LED. Standard 2MB of RAM; 600-by-600-dpi resolution; 500 sheets input, 250 output. **PRO/CON:** Lowest price and fastest text speed on chart. Tricky installation and control panel; multilingual manual is hard to use; not good for graphics—gray-scale images are overly dark. | 656 |
| | **COLOR WORKGROUP PRINTERS** | | | | | | | |
| 1 | HP DeskJet 1600CM<br>800/752-0900<br>www.hp.com | July 96 | $1999 | 89 | 4.4 | 0.5 | **FEATURES:** 8-ppm monochrome/2-ppm color ink jet. Standard 6MB of RAM; 600-by-600 dpi monochrome, 300-by-300-dpi color resolution. **PRO/CON:** Inexpensive, good print quality, adequate speed; PostScript and ethernet included. Ink jet pages, unlike a laser's, are sensitive to moisture and light. | 657 |
| 2 | Tektronix Phaser 350<br>800/835-6100<br>www.tek.com | Jan 97 | $3420 | 87 | 3.4 | 0.9 | **FEATURES:** 6-ppm solid ink printer. Standard 8MB of RAM; 300-by-300 dpi monochrome and color resolutions. **PRO/CON:** Stellar color quality, fast graphics speed; solid ink blocks are easy to load; black ink is free for as long as you own printer. Text speed is slow, and it takes only letter-size paper. | 658 |
| 3 | HP Color LaserJet 5M<br>800/752-0900<br>www.hp.com | retested this month | $5199 | 87 | 5.8 | 0.7 | **FEATURES:** 10-ppm monochrome/3-ppm color laser. Standard 24MB of RAM; 300-by-300-dpi monochrome and color resolutions. **PRO/CON:** Dramatic $2196 price drop makes it lowest-price color laser on chart. Print quality is good for text and simple graphics, but not sophisticated continuous-tone images like photographs. | 659 |
| 4 | Xerox XPrint 4920 Plus<br>800/349-3769<br>www.xerox.com | Sept 96 | $6500 | 86 | 5.5 | 0.3 | **FEATURES:** 12-ppm monochrome/3-ppm color laser. Standard 16MB of RAM; 600-by-600-dpi monochrome and color resolutions. **PRO/CON:** Superb print quality; optional $1341 feeder gives it the highest maximum paper capacity (1750) of any color laser on chart. Slow printing full-page graphics. | 660 |
| 5 | Tektronix Phaser 550<br>800/835-6100<br>www.tek.com | July 96 | $6532 | 84 | 5.6 | 0.5 | **FEATURES:** 14-ppm monochrome/5-ppm color laser. Standard 8MB of RAM; 600-by-600-dpi monochrome and color resolutions, true 1200 dpi with 24MB of RAM. **PRO/CON:** Very good print quality; only color laser that accommodates labels and manual double-sided printing. Proprietary RAM is expensive. | 661 |

Best Buy  online www.pcworld.com/t10printers.  Windows 95-certified Plug and Play  All products: 906

**HOW WE TEST** The overall rating for both monochrome and color workgroup printers is based on print quality (27 percent), price (20 percent), features and ease of use (20 percent), speed (15 percent), service and support (13 percent), and cost of consumables (5 percent). For all ratings, higher is better. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

MAJOR SHAKE-UPS transform the monochrome printer chart this month: Newcomers from Lexmark storm to the top, former champion IBM takes a fall, and Okidata drops a pricing bombshell. All in all, three new printers make the chart.

At the center of all the activity: Lexmark's new Optra S 1650 and S 1250 lasers, which took the Best Buy and second-place positions. Faster drivers for Hewlett-Packard's LaserJet 5M boost- ▶

ed it to third place. May's Best Buy, IBM's Network Printer 12, fell to fourth. At fifth place, the new Okidata OkiPage 16n is the first 16-ppm printer we've seen for $999.

The color chart was peaceful by comparison. We retested the HP Color LaserJet 5M with updated PostScript drivers, but it rose from fourth to third place only because of a dramatic price drop from $7395 to $5199, making it the least expensive color laser on the chart.

### LEXMARK REGAINS THE TOP

LEXMARK'S NEW 16-pages-per-minute Optra S 1650 and 12-ppm Optra S 1250 have overtaken the IBM Network Printer 12, only four months after the IBM did the same to the old line of Optras. The Optra S lasers are fast for the price: The Optra S 1250 prints text at 9.6 ppm compared with the IBM Network Printer 12's 8.9 ppm, but it costs $115 less. And the Optra S 1650, which is only $50 more than the IBM, prints text at 11.6 ppm.

Print quality is sharp at the Optras' default 600-dots-per-inch resolution; only the gray-scale images looked a little coarse. However, the Optras are the only monochrome printers on the chart that are capable of true 1200-dpi, and our samples looked even better at that resolution.

The completely new Optra S designs include accessible paper trays, straightforward control panels, and numerous paper, network, and storage options. The Optras are still in the process of Plug and Play certification, but they installed flawlessly in our tests.

The only blemish on the Optra S series is the manual, which is the same for all the Optra lasers. Sometimes it's hard to tell which models have which options, and that's a problem because the installation procedure for some options varies depending on the model.

The Lexmark manual was better than that of the new Okidata OkiPage 16n, however; Okidata's multilingual approach was a mess to read. That and other ease of use problems do not overshadow the main selling point of the OkiPage: a $999 street price that's the lowest on the chart—and $301 less than the Optra S 1650, the chart's only other 16-ppm printer. The Okidata is also unique for using an array of light-emitting diodes (LEDs), instead of a laser, to print.

### DIRT-CHEAP LASER IS FAST, TOO

THE OKIPAGE 16N would make a good text workhorse: Its 12.4-ppm text speed is the fastest we've seen, and the quality is good. The OkiPage 16n's 1.9-ppm graphics speed is slower than most printers on the chart, however, and the gray-scale images we printed on it were overly dark.

Ease of use is where the Okidata printer is weakest. The control panel's multiple-function buttons are confusing to navigate. Most annoying is the status dialog box that sticks around on the desktop long after you've stopped using the printer.

**OUR NEW MONOCHROME BEST BUY is the Lexmark Optra S 1650, a fast laser with a low price and an easy-to-use design.**

We're reserving judgment on the Xerox DocuPrint 4512, a new 12-ppm monochrome laser, until it resolves some problems with printing graphics. It struggled in our CorelDraw tests and couldn't print gray-scale images properly in Adobe Photoshop. Xerox recommended various work-arounds but had no scheduled date for releasing fixes.

### RETESTED HPS RANK HIGHER

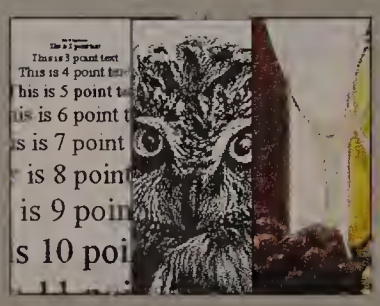
WE RETESTED TWO Hewlett-Packard workgroup printers—both on our chart for many months—with their most current drivers. The HP LaserJet 5M monochrome laser showed an impressive boost in graphics speed, from 1.1 ppm to 1.9 ppm—enough to climb to third place from fourth; text speed improved slightly.

We usually test color printers in PostScript. But when we first examined the HP Color LaserJet 5M a year ago, its PostScript drivers were unable to finish our test suite, so we used its PCL drivers instead. At the time, it turned in a fast 6.9-ppm text speed and 0.9-ppm graphics speed. Retested this month in PostScript, the Color LaserJet 5M had no further problems. Although it's slower in PostScript than in PCL on the same tests, it's still fast compared with its peers. Finally, last month we reported that this machine is Plug and Play–certified; it is not, but it installed flawlessly nevertheless.

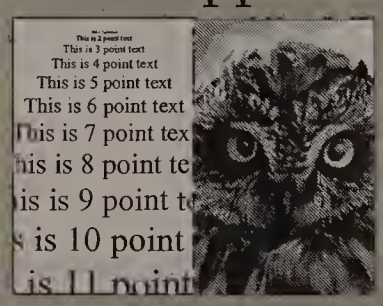
*—Dan Littman* ■

PRINT QUALITY SAMPLES

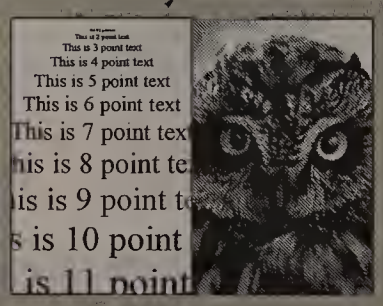
## Lexmark, Okidata Grapple With Gray Scale



**HP DESKJET 1600CM**
**Our long-standing color ink jet Best Buy prints good text and gray-scale images, plus attractive color—achieving near-laser quality for significantly less money.**



**LEXMARK OPTRA S 1650**
**The new monochrome Best Buy prints very good text at all point sizes. Gray-scale images tend to look a little coarse, but the gray levels are nicely subtle.**



**OKIDATA OKIPAGE 16N**
**This fast LED printer offers text as sharp as a laser's, but the gray-scale images we printed look dark and a little foggy compared to the laser printers we've tested.**

# Microsoft's swat team wants you.

If you want to be part of our distinctive corps of systems saviors, Microsoft's Technical Support and Customer Enterprise Units want to enlist your talent. We're the ones who get called in when Fortune 1000 corporations encounter the biggest, most critical software challenges.

You'll be using the hottest technology. Rolling up your sleeves in the lab. And interacting with Development. In fact, you'll be using every bit of knowledge you have, and what you don't know, you'll learn.

**Technical Account Managers (WA, TX, NC)**
**Escalation Engineers (WA, TX, NC)**
**Developer Support Engineers (WA, NC)**
**Enterprise Customer Support Engineers (WA, TX, NC)**

- **Database**
- **Network**
- **Messaging/Internet**
- **SMS**
- **SNA Server**
- **Premier Applications**

Sound like a perfect fit? E-mail your resume in ASCII text format to hireme@microsoft.com (tell us what position you're interested in and indicate A58w9-0601) or fax your resume to (206)704-4334. We offer competitive salaries and excellent benefits. We're an equal opportunity employer and support diversity in the workplace.

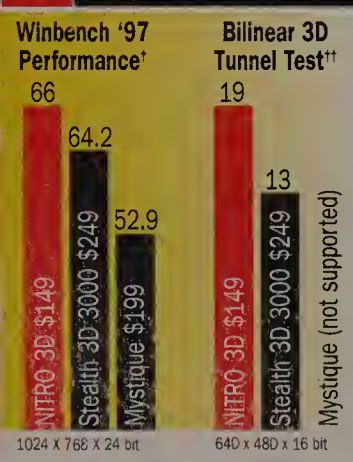
Microsoft®

www.microsoft.com/jobs/

# We'll take you there

NEW

## NITRO 3D™




### Advanced 3D Rendering Features

- Gouraud shading for more realistic shading effects
- Z buffering for faster 3D performance
- Bi- and Tri-linear filtering for smooth images
- MIP Mapping for better resolution of texture maps
- Alpha Blending for complete or partial transparencies
- Perspective Correction for proper perception of depth
- Video Texture Mapping to place video into images

## getting back is up to you

Enter a 3D world limited only by your imagination. A world where images flow as fast as your ideas, powered by the most advanced technology.

- 4MB of Ultra High-Speed (600+MB/s) Video Memory
- 1024 x 768 resolution with 16.7 million colors
- Microsoft Direct3D and Active Movie support
- 170Mhz RAMDAC for refresh rates up to 160Hz

NITRO 3D. New from STB, one of the largest multimedia companies in this world. Helping you create yours. From $99.99*

Copyright 1997 STB Systems, Inc. All rights reserved. All trade names referenced are the trademarks, service marks,or registered trademarks of their respective holders. Mechwarrior® 2 image © 1996 FASA Corporation. †WinBench 97 1.0 tests conducted on a Gateway P5-200 MMX, PCI 2.0 Bus, 512K cache, 32MB SDRAM, 1024 x 768 x 24 bit, at 75Hz refresh without GDI bypass as required for Microsoft certification. Memory and driver versions: STB Nitro 3D™(4 MB)1.50G 2/28/97, Diamond Stealth 3D 3000 (4MB) 4.04.00.2104 12/10/96, and Matrox Mystique (4MB) 3.30 1/30/97. ††Single pass bilinear filtering tunnel 3D test. Prices and specifications subject to change without notice. *Price for 2 MB after introductory rebate. **Software shown included with 4MB model. 2MB includes Mechwarrior2: Mercenaries and Hyperblade.

Available at:

COMPUSA · BEST BUY · COMPUTER City · MICRO CENTER · Fry's ELECTRONICS · ELEK-TEK, Inc. · ComputAbility Consumer Electronics · PC Connection 800-800-5555

STB Systems, Inc.

(888) 234-8750 http://www.stb.com

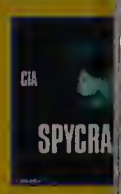
Circle 210 on reader service card

FREE
Full versio
games fro
Activision
with your
purchase
NITRO 3D

HyperBlade

Interstate

MechWarr
Mercenari



Spycraft:
Great Gan

PC WORLD

# TOP 10 MONITORS

| | 17-INCH MONITORS | Month tested | Street price (4/21/97) | Overall rating | Quality of text/graphics | Comments | Reader service number |
|---|---|---|---|---|---|---|---|
| 1 | Iiyama Vision Master Pro 17<br>800/594-7476, 800/594-7480<br>www.iiyama.com | Jan 97 | $698 | 93 | very good/ excellent | **FEATURES:** 15.9-inch viewable screen, .25mm Diamondtron tube, up to 85-Hz refresh rate,[1] Level 2b Plug and Play ready,[2] three-year warranty, 12-hour weekday toll-free support. **PRO/CON:** $101 price drop, great graphics, sharp text, easy-to-adjust on-screen menus, large viewable area; two faint lines visible across screen. | 668 |
| 2 | ViewSonic PT775<br>800/888-8583<br>www.viewsonic.com | NEW | $899 | 90 | excellent/ excellent | **FEATURES:** 15.9-inch viewable screen, .25mm Diamondtron tube, up to 119-Hz refresh rate,[1] Level 2b PnP ready,[2] three-year warranty, 11-hour weekday toll-free support. **PRO/CON:** Super text and graphics, large viewable area, easy to adjust, TCO'92 compliant, color correction utility; pricey, two faint lines visible across screen. | 669 |
| 3 | Dell UltraScan 1000HS<br>800/289-3355<br>www.dell.com | NEW | $649 | 84 | very good/ very good | **FEATURES:** 15.9-inch viewable screen, .25mm Trinitron tube, up to 105-Hz refresh rate,[1] Level 2b PnP ready,[2] 24-hour toll-free support. **PRO/CON:** Razor-sharp text and graphics detail for a good price, TCO'92 compliant, ample controls are easy to adjust; brief one-year warranty, two faint lines across screen. | 670 |
| 4 | Panasonic PanaSync S17<br>800/742-8086<br>www.panasonic.com | Sept 96 | $629 | 84 | very good/ very good | **FEATURES:** 15.7-inch viewable screen, .27mm dot pitch tube, up to 85-Hz refresh rate,[1] Level 2b PnP ready,[2] three-year warranty, 24-hour toll-free support. **PRO/CON:** $70 price drop, very crisp text and graphics; on-screen menu icons are difficult to decipher, must press control buttons too much to find on-screen menu items. | 671 |
| 5 | Mitsubishi Diamond Pro 87TXM<br>800/843-2515<br>www.mitsubishi-display.com | Mar 97 | $799 | 84 | very good/ good | **FEATURES:** 15.7-inch viewable screen, .25mm Diamondtron tube, up to 107-Hz refresh rate,[1] Level 2b PnP ready,[2] three-year warranty, 12-hour weekday toll-free support. **PRO/CON:** Crisply defined text, accurate color rendition, easy-to-use controls, TCO'92 compliant; two faint lines visible across screen. | 672 |
| 6 | Continental DigiView 1709D<br>818/327-8899<br>www.digiview.com | Sept 96 | $699 | 84 | very good/ very good | **FEATURES:** 15.9-inch viewable screen, .25mm Diamondtron tube, up to 101-Hz refresh rate,[1] Level 2b PnP ready,[2] three-year warranty, 8-hour weekday toll-free support. **PRO/CON:** $100 price drop, crisp text and pictures, easily adjustable screen; rear on/off switch, short support hours, two faint lines visible across screen. | 673 |
| 7 | ViewSonic 17GS<br>800/888-8583<br>www.viewsonic.com | Mar 97 | $619 | 83 | very good/ very good | **FEATURES:** 15.9-inch viewable screen, .27mm dot pitch tube, up to 85-Hz refresh rate,[1] Level 2b PnP ready,[2] three-year warranty, 11-hour weekday toll-free support. Less expensive, dot pitch alternative to Best Buy PT775. **PRO/CON:** $30 price drop, well-defined text and images, accurate colors; control menus awkward to use. | 674 |
| 8 | Princeton Graphic Systems E075<br>800/747-6249<br>www.prgr.com | Mar 97 | $648 | 83 | good/ very good | **FEATURES:** 15.8-inch viewable screen, .26mm dot pitch tube, up to 120-Hz refresh rate,[1] Level 2b PnP ready,[2] three-year warranty, 24-hour toll-free technical support (automated after 5 p.m.). **PRO/CON:** $51 price cut, very detailed graphics, high refresh rates; type is slightly ghosted, must hunt down on-screen menu items. | 675 |
| 9 | NEC MultiSync P750<br>800/632-4636<br>www.nec.com | Mar 97 | $949 | 83 | very good/ good | **FEATURES:** 15.6-inch viewable screen, .25mm CromaClear tube, up to 117-Hz refresh rate,[1] Level 2b PnP ready,[2] three-year warranty, 12.5-hour weekday toll-free support. **PRO/CON:** $100 price drop, very sharp text, realistic color, easy-to-use on-screen menus; smallish viewable area, most expensive monitor on chart. | 676 |
| 10 | IBM P70<br>800/426-2968<br>www.pc.ibm.com | Sept 96 | $919 | 83 | very good/ very good | **FEATURES:** 15.9-inch viewable screen, .25mm Trinitron tube, up to 85-Hz refresh rate,[1] Level 2b PnP ready,[2] three-year warranty, 24-hour toll-free technical support. **PRO/CON:** $150 price drop, sharp text and graphics, easy-to-use on-screen menus; still expensive, two faint lines visible across screen. | – |

Best Buy  online  For expanded reviews, visit www.pcworld.com/t10monitors.  All products: 907

[1] Highest refresh rate at 1024 by 768 resolution.  [2] Level 2b Plug and Play monitors and graphics cards can communicate bidirectionally. However, Windows 95 does not fully utilize monitor Plug and Play.

**HOW WE TEST** Ten judges rate a monitor's text and graphics quality. We evaluate each unit on how well it displays typical business letters, spreadsheets, Web pages, and scanned images. The overall rating is based on text and graphics quality (25 percent each), features and ease of use (25 percent), price (20 percent), and service and support (5 percent). The best possible overall rating is 100. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

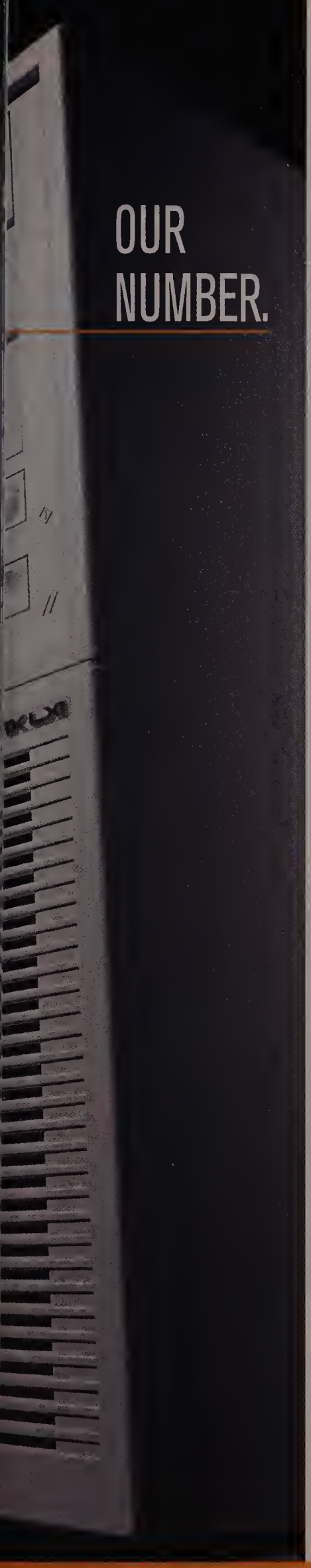
IIYAMA tightens its grip on the number one spot this month with a $101 price cut. With great graphics that match the Iiyama's and even sharper text, the new ViewSonic PT775 debuts at number two. This model replaces the PT770 (number five in March). It costs $201 more than the Iiyama, but it's tops for graphics pros. The $649 Dell UltraScan 1000HS earns a third-place showing with an attractive price and extensive adjustability. ■

# THERE'S ONLY ONE THING YOU NEED TO GET YOUR NETWORK UP AND RUNNING.

Micron Sales Hours: Mon-Fri 6am-10pm, Sat 7am-5pm (MT) • Technical Support Available 24 Hours A Day-7 Days A Week
Tollfree from Mexico: 95-800-708-1755 • Tollfree from Canada: 800-708-1758 • Tollfree from Puerto Rico: 800-708-1756 • International Sales: 208-893-8970 • International Fax: 208-893-7393

*PC World, best overall PC company for reliability and service, December, 1996.

© 1997 Micron Electronics, Inc. All rights reserved. Micron Electronics is not responsible for omissions or errors in typography or photography. All purchases are subject to availability. Prices and specifications may be changed without notice; prices do not include shipping and handling and any applicable taxes. 30-day money-back policy does not include return freight and original shipping/handling charges, applies only to Micron brand products and begins from date of shipment. All sales are subject to Micron Electronics' current terms and conditions of sale. Lease prices based on 36-month lease. The Intel Inside Logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. Microsoft, Windows, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation. All other service marks, trademarks and registered trademarks are the property of their respective companies.



OUR NUMBER.

# THE BEST HARDWARE, SOFTWARE AND SUPPORT FOR YOUR NETWORK SOLUTION, ALL IN ONE PLACE.

intel inside pentium® PROCESSOR

For the absolute best performance for the price, one name says it all. Micron. It's a reputation you can take to the bank for your network needs, beginning with the Micron™ Vetix™ LXI server.

The Micron Vetix LXI server comes ready to get your network up and running, right out of the box. With Microsoft® Windows NT® Server 4.0 preinstalled and Intel LANDesk® Server Manager standard, the Vetix LXI is a great value. We can also preconfigure a server with Novell IntranetWare 4.11. The Vetix LXI is expandable with 1 or 2 Pentium® Pro processors, 8 open slots and 9 drive bays.

intel inside PENTIUM® PRO PROCESSOR

To enhance efficiency, upgrade your network with the Micron ClientPro™ MTA. The MTA is stability by design. It's network ready. And it integrates state-of-the-art DMI 2.0 and Intel LANDesk software to simplify remote management and maintenance of your network. Bottom line, the ClientPro MTA combines the advanced features you demand, reducing network down time for lower total cost of ownership.

What's more, Vetix and ClientPro are backed by an industry-leading 5-year/3-year Micron Power℠ limited warranty. And are made by Micron — honored as the best in the business for service and reliability.* Call us or visit our Web site today.

## VETIX SERVERS STANDARD FEATURES

Dual Pentium Pro ZIF sockets
256KB integrated L2 cache
Memory upgradable to 1GB (8 DIMM slots)
8 open expansion slots: 5 PCI, 2 ISA, 1 shared ISA/PCI
Integrated Adaptec PCI Ultra Wide SCSI-3 controller
Integrated Intel EtherExpress™ Pro 100 controller
Integrated SVGA graphics
12X SCSI-2 CD-ROM drive
3.5" floppy drive
9 drive bays: 6 internal 3.5", 3 external 5.25"
Microsoft Mouse, 104-key keyboard
Integrated hardware instrumentation
Dedicated server technical support, 7x24
5-year/3-year Micron Power limited warranty
1-year next-business-day on-site service†

†On-site service for the Vetix LXI server is provided by Digital Equipment Corporation and is optional.

## VETIX LXI-N

Intel 200MHz Pentium Pro processor
32MB ECC EDO RAM
2GB Ultra Wide SCSI-3 hard drive

**$2,999**
Bus. lease $102/mo.

## VETIX LXI

Intel 200MHz Pentium Pro processor
15" Micron 15FGx, .28dp (13.7" display)
Microsoft Windows NT Server 4.0 (10-user license)
Intel LANDesk Server Manager 2.52
NOS/software support (3 incident resolutions/1st year), 7x24

32MB ECC EDO RAM
2GB Ultra Wide SCSI-3 hard drive

**$4,599**
Bus. lease $156/mo.

64MB ECC EDO RAM
4GB Ultra Wide SCSI-3 hard drive

**$5,099**
Bus. lease $160/mo.

## VETIX 2LXI

Dual Intel 200MHz Pentium Pro processors
15" Micron 15FGx, .28dp (13.7" display)
Microsoft Windows NT Server 4.0 (10-user license)
Intel LANDesk Server Manager 2.52
NOS/software support (3 incident resolutions/1st year), 7x24

128MB ECC EDO RAM
Dual 2GB Ultra Wide
SCSI-3 hard drives (4GB total)

**$6,499**
Bus. lease $204/mo.

256MB ECC EDO RAM
Dual 4GB Ultra Wide
SCSI-3 hard drives (8GB total)

**$7,999**
Bus. lease $251/mo.

## NETWORK AND SERVER ACCESSORIES

| | |
|---|---|
| 3Com® OfficeConnect Hub 8/TPC | $149 |
| 3Com OfficeConnect Switch 140 | $969 |
| APC Smart-UPS 700 with PowerChute plus software | $389 |
| Sony 4/8GB SCSI DDS-2 tape backup drive with tape (requires SCSI host adapter) | $749 |
| Seagate Backup Exec | $249 |
| Mylex dual channel Ultra SCSI-3 RAID caching controller with 4MB RAM | $899 |
| Novell IntranetWare 4.11 (5-user license, for Vetix LXI-N only) | $699 |

## CLIENTPRO STANDARD FEATURES

512KB pipeline burst cache, flash BIOS, DMI support
3.5" floppy drive
3Com 3C905 network adapter
Integrated S3 Trio ViRGE/DX graphics accelerator, 2MB EDO RAM
Integrated wavetable sound
Tool-free minitower or desktop
Microsoft Mouse, 104-key keyboard
Microsoft Windows® 95
Intel LANDesk Client Manager
5-year/3-year Micron Power limited warranty

## CLIENTPRO MTA

Intel 133MHz Pentium processor
16MB EDO RAM
1.6GB SMART EIDE hard drive
15" Micron 15FGx, .28dp (13.7" display)

**$1,599**
Bus. lease $54/mo.

WITH MICROSOFT WINDOWS NT WORKSTATION ADD $99

**MICRON POWER℠ WARRANTY**

5-year limited warranty on microprocessor and main memory
3-year limited parts-only system warranty (1-year for TransPort VLX)
1-, 2- or 3-year optional on-site service agreement for Micron desktop and server systems
30 days of free Micron-supplied software support for Micron desktop systems; 3 optional network operating system incident resolutions included for Micron server systems
30-day money back policy
24-hour technical support

The foregoing is subject to and qualified by Micron's standard limited warranties and terms and conditions of sale. Terms and conditions of sale may vary for specific configurations. Copies of the limited warranties may be obtained on our Web site or by calling Micron.

MICRON ELECTRONICS™

Designed for Microsoft® Windows® 95 · yes NetWare Tested and Approved · MICROSOFT WINDOWS NT READY-TO-RUN

# CALL NOW FOR DETAILED PRICING AND OPTIONS

**800•421•8942**

www.micronpc.com

Circle 160 on reader service card

# EVEN BEFORE THE MMX™ TECHNOLOGY RACE BEGAN, PC MAGAZINE DECLARED A WINNER.

**PC Magazine Editors' Choice Award**
**2/4/97**

Featured Computer Artist: Diane Fenster

**DELL DIMENSION XPS M200s**
200MHz PENTIUM® PROCESSOR
**WITH MMX™ TECHNOLOGY**

- Mini Tower Model
- ★ **32MB SDRAM Memory**
- 512KB Single Bank Pipeline Burst Cache
- ★ **4.3GB Hard Drive (9.5ms)**
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- 4MB EDO ViRGE 3D Video Card
- ★ **16X Variable EIDE CD-ROM Drive**
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers
- 56K Capable* U.S.R. x2 Telephony Modem
- ★ **MS® Office 97 Small Business Edition plus Bookshelf**
- MS Windows® 95/MS IntelliMouse
- 3 Year Limited Warranty† with 1 Year On-site^ Service
- ★ *Upgrade to 64MB SDRAM, add $239.*
- ★ *Upgrade to a 1000HS Trinitron® Monitor (15.9" v.i.s., .26dp, 1600x1200 max. res.), add $224.*

**$2399**

Business Lease◊: $89/Mo.
Order Code #500624

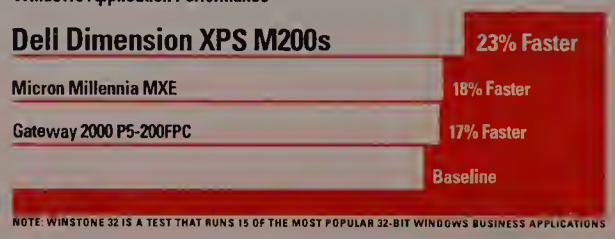
**NOW WITH MMX™ TECHNOLOGY.** Everyone's racing to get hold of the the new Intel® Pentium® processor with MMX™ technology. After all, this speed demon works wonders with multimedia and video, and can even deliver richer Internet content. But which computer to buy? Well... ours. The Dell Dimension XPS M200s just won *PC Magazine*'s Editors' Choice award and was named a price/performance leader. And bested the field in *PC Computing*'s test, too (see graph).

MMX™ intel inside pentium® PROCESSOR

It just goes to show that in MMX technology, as in everything else, the race goes to the swift.

**– ★★★★★ *PC Computing* 2/97 –**

**Mach-Speed PC's**
**Windows Application Performance**




NOTE: WINSTONE 32 IS A TEST THAT RUNS 15 OF THE MOST POPULAR 32-BIT WINDOWS BUSINESS APPLICATIONS

DELL®

**TO ORDER TOLL-FREE**
**800-873-1140**

**TO ORDER ONLINE**
www.dell.com/buydell

Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D

Keycode #03263

†For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. ^On-site service provided by an independent third-party provider. May not be available in certain remote areas. *x2 products are capable of 56Kbps downloads Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. *Prices and specifications valid in the U.S only and subject to change without notice. Intel, the Intel Inside logo and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. ©1997 Dell Computer Corporation. All rights reserved.

PC WORLD

# TOP 10 GRAPHICS BOARDS

| | GRAPHICS BOARDS | Month tested | Street price (4/25/97) | Overall rating | PC WorldBench graphics score | Comments | Reader service number |
|---|---|---|---|---|---|---|---|
| 1 | STB Nitro 3D<br>888/234-8750<br>www.stb.com | NEW | $149 | 104 | 189<br>very good | **FEATURES:** 4MB of EDO DRAM, 120-Hz refresh rate at 1024 by 768, optional TV tuner, 3-D acceleration, bilinear video interpolation, Active Movie MPEG player, S3 Virge/GX chip. **PRO/CON:** Fast 2-D and 3-D performance, excellent AVI and MPEG playback, lifetime warranty; not all components installed automatically. | 737 |
| 2 | Hercules Terminator 3D/DX<br>800/532-0600<br>www.hercules.com | June 97 | $149 | 104 | 189<br>very good | **FEATURES:** 4MB of EDO DRAM, 120-Hz refresh rate at 1024 by 768, 3-D acceleration, bilinear video interpolation, Xing MPEG software, S3 Virge/DX chip. **PRO/CON:** 2-D and 3-D graphics improved over Terminator 3D, excellent MPEG playback, good software; mediocre AVI playback. | 738 |
| 3 | Matrox Mystique<br>800/361-1408<br>www.matrox.com/mga | May 97 | $149 | 102 | 185<br>very good | **FEATURES:** 4MB of SGRAM, 130-Hz refresh rate at 1024 by 768, 3-D acceleration, bilinear video interpolation, Compcore MPEG software, MGA-1064SG chip, bundled games. **PRO/CON:** Extra RAM improves some of the best 3-D here, good AVI and MPEG video playback, 2MB version also good; refresh rates hard to set. | 739 |
| 4 | Diamond Stealth 3D 3000XL<br>800/468-5846<br>www.diamondmm.com | Mar 97 | $213 | 102 | 184<br>very good | **FEATURES:** 4MB of VRAM, 120-Hz refresh rate at 1024 by 768, 3-D acceleration, bilinear video interpolation, Mediamatics MPEG software, S3 Virge/VX chip, bundled games. **PRO/CON:** Good for graphical apps, great software utilities, excellent AVI and video playback; expensive. | 740 |
| 5 | STB Velocity 3D<br>888/234-8750<br>www.stb.com | Feb 97 | $199 | 101 | 187<br>very good | **FEATURES:** 4MB of VRAM, 120-Hz refresh rate at 1024 by 768, 3-D acceleration, bilinear video interpolation, Mediamatics MPEG software, S3 Virge/VX chip, bundled games. **PRO/CON:** Good for graphically intense programs, memory upgradable, lifetime warranty; mediocre AVI and MPEG video playback. | 741 |
| 6 | STB Lightspeed 128<br>888/234-8750<br>www.stb.com | Aug 96 | $99 | 101 | 186<br>very good | **FEATURES:** 2.25MB of MDRAM, 120-Hz refresh rate at 1024 by 768, bilinear video interpolation, Xing MPEG software, Tseng Labs ET6000 chip. **PRO/CON:** Performs well with business and graphics programs, perfect AVI video playback, excellent MPEG, lifetime warranty, low price; no 3-D acceleration. | 742 |
| 7 | Matrox Millennium<br>800/361-1408<br>www.matrox.com/mga | Apr 97 | $219 | 100 | 187<br>very good | **FEATURES:** 4MB of WRAM, 120-Hz refresh rate at 1024 by 768, Compcore MPEG software, Matrox MGA-2064W chip, bundled game and 3-D graphics program. **PRO/CON:** Fast, superb AVI and MPEG video, great software utilities, upgradable memory; expensive, no bilinear interpolation for sharp images. | 743 |
| 8 | ATI 3D Xpression+ PC2TV<br>905/882-2600<br>www.atitech.ca | Jan 97 | $189 | 99 | 180<br>very good | **FEATURES:** 4MB of SDRAM, 150-Hz refresh rate at 1024 by 768, 3-D acceleration, bilinear video interpolation, ATI MPEG player, ATI Rage II chip, bundled games and 3-D graphics programs. **PRO/CON:** More colors at high resolutions, connects to a TV, excellent AVI and MPEG video; 3-D quality is merely adequate. | 744 |
| 9 | Diamond Stealth 3D 2000 Pro<br>800/468-5846<br>www.diamondmm.com | NEW | $180 | 99 | 182<br>very good | **FEATURES:** 4MB of EDO DRAM, 100-Hz refresh rate at 1024 by 768, 3-D acceleration, bilinear video interpolation, Mediamatics MPEG software, S3 Virge/DX chip, bundled multimedia software. **PRO/CON:** Excellent MPEG and AVI video playback; software installation is difficult, performance could be better for this chip. | 745 |
| 10 | VideoLogic GrafixStar 600<br>800/578-5644<br>www.videologic.com | Apr 97 | $149 | 99 | 189<br>very good | **FEATURES:** 4MB of MDRAM, 120-Hz refresh rate at 1024 by 768, bilinear video interpolation, Xing MPEG software, Tseng Labs ET6000 chip, bundled multimedia apps. **PRO/CON:** Very fast 2-D performance, excellent software utilities; no 3-D acceleration, average AVI and MPEG performance. | 746 |

Best Buy  For expanded reviews, visit www.pcworld.com/t10graphics.  Windows 95 Plug and Play  All products: 911

**HOW WE TEST** We tested PCI boards under Windows 95 with PC WorldBench 1.0 at 800 by 600 resolution and 16.8 million colors (reported here) and at 1024 by 768 and 65,536 colors. Boards were tested in a Dell Dimension XPS P133c with 16MB of EDO DRAM and 256K of pipeline-burst secondary cache. The overall rating is based on performance (40 percent), features (30 percent), price (20 percent), and support policies (10 percent). For all ratings, higher is better. Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

GOOD NEWS for gamers: The first-place Best Buy STB Nitro 3D makes 3-D faster and smoother. Based on S3's Virge/GX—the next generation of the Virge chip—the Nitro promises to render 3-D up to three times faster than boards with the older chip. Other boards on the chart, including the second-place Hercules Terminator 3D/DX and the new Diamond Stealth 3D 2000 Pro in ninth, also have chips that will improve 3-D performance. ■

# You can tell a lot about a person's hard drive just by looking at him.

Oh, the things your hard drive says about you. Your life's on it, yet you rarely give it a second thought. Unless you were to, say, lose everything on it. Then it gets really interesting.

Not to worry. With a Western Digital drive, your life's information is absolutely safe. We know your information — whether it's all work and no play or any combination of the two — is your information. You surround yourself with it. And you want it stored in a customized, secure, accessible place. A Western Digital hard drive.

Western Digital makes the world's most recommended hard drives. We offer a whole line of high-quality Enhanced IDE and SCSI drives. Drives for you. Drives for every life. After all, nothing embodies your ideas like your hard drive. So visit our website at www.wdc.com/life or call 1-888-4WD-DRIVE (493-3748), extension 111.

©1996 Western Digital Corporation.

Western Digital

**PUT YOUR LIFE ON IT.**

Circle 251 on reader service card

PC WORLD

# TOP 10 MODEMS

| | INTERNAL MODEMS | Month tested | Street price (4/15/97) | Overall rating | Average transfer time per MB (min:sec) | Comments | Reader service number |
|---|---|---|---|---|---|---|---|
| 1 | U.S. Robotics Courier V.Everything<br>800/877-2677<br>www.usr.com | NEW | $215 | 80 | 2:44 | **FEATURES:** 33.6-kbps, 8-bit card, FlashROM, 230.4-kbps modem-to-PC speed, Caller ID, distinctive ring, QuickLink II fax/data software. **PRO/CON:** Thorough and accessible documentation, solid performer, toll-free tech support, cross-ship replacement of modem by vendor; expensive. | 613 |
| 2 | Zoom FaxModem V.34I Plus<br>800/631-3116<br>www.zoomtel.com | retested this month | $89 | 80 | 2:38 | **FEATURES:** 33.6-kbps, 8-bit card, MNP10 and MNP10EC cellular protocols, stores multiple profiles, distinctive ring, Comit and WinFax Lite fax/data software. **PRO/CON:** Flawless installation, cheapest modem on the chart, cross-ship replacement, very fast, seven-year warranty; no security features. | 614 |
| 3 | Hayes Optima 336B Internal Business Modem<br>770/840-9200<br>www.hayes.com | NEW | $249 | 79 | 2:31 | **FEATURES:** 33.6-kbps, 16-bit card, FlashROM, Caller ID, 230.4-kbps modem-to-PC speed, voice mail, distinctive ring, SmartCom Message Center LE fax/data software. **PRO/CON:** Fastest modem tested, full security, cross-ship replacement; very expensive, 8.5-inch card may be hard to install. | 615 |
| 4 | Diamond Multimedia SupraExpress 336i Sp with ASVD<br>800/727-8772<br>www.diamondmm.com | retested this month | $130 | 78 | 2:45 | **FEATURES:** 33.6-kbps, 16-bit card, distinctive ring, FlashROM, full-duplex speakerphone, voice mail, ASVD, Caller ID, Comit and FaxTalk Messenger fax/data software. **PRO/CON:** Tech support available 14 hours per day during the week, 8 hours on Saturdays, cross-ship replacement; average performer, pricey. | 616 |
| 5 | Shark Multimedia Baby Tiger 336R<br>800/800-3321<br>www.sharkmm.com | NEW | $95 | 79 | 2:38 | **FEATURES:** 33.6-kbps, 16-bit card, MNP10 and MNP10EC cellular protocols, distinctive ring, voice mail, full-duplex speakerphone, DSVD, Caller ID, FaxWorks Voice voice/fax/data software. **PRO/CON:** Great performer, inexpensive; minimal support policies, 8-inch card might get in the way. | 617 |
| 6 | Wisecom Accelerator IV 33600 Voice Internal<br>888/9473266<br>www.wisecominc.com | NEW | $99 | 78 | 2:42 | **FEATURES:** 33.6-kbps, 16-bit card, distinctive ring, voice mail, full-duplex speakerphone, ASVD, Caller ID, SuperVoice voice/fax/data software. **PRO/CON:** Inexpensive, above-average performer, toll-free tech support; installation is a nightmare, not FlashROM upgradable. | 618 |
| 7 | Practical Peripherals Practical Internet Kit<br>770/441-0896<br>www.practinet.com | retested this month | $99 | 76 | 2:48 | **FEATURES:** 33.6-kbps, 16-bit card, QuickLink II Windows/DOS fax/data software, lifetime warranty. **PRO/CON:** Inexpensive, great support policies including cross-ship replacement and weekend tech support; paltry documentation, installation guide could be clearer, below-average performer. | 619 |
| 8 | Hayes Accura 336 Total Gaming Solution<br>770/840-9200<br>www.hayes.com | NEW | $179 | 76 | 2:49 | **FEATURES:** 33.6-kbps, 16-bit card, voice mail, full-duplex speakerphone, DSVD, Caller ID, stores multiple profiles, SmartCom Message Center LE voice/fax/data software. **PRO/CON:** Cross-ship replacement, comes with microphone, headset, WebTalk; below-average performer, expensive. | 620 |
| 9 | Boca 33.6 Game/Business Modem<br>561/997-7202<br>www.bocaresearch.com | NEW | $120 | 76 | 2:49 | **FEATURES:** 33.6-kbps, 16-bit card, voice mail, full-duplex speakerphone, DSVD, Caller ID, QuickLink Message Center voice/fax/data software. **PRO/CON:** Great software bundle includes both game and business titles; below-average performer, CD-ROM containing drivers not clearly labeled. | 621 |
| 10 | Practical Peripherals Practical 336 Voice/Data/Fax<br>770/441-0896<br>www.practinet.com | retested this month | $119 | 74 | 3:00 | **FEATURES:** 33.6-kbps, 16-bit card, voice mail, full-duplex speakerphone, distinctive ring, Caller ID, Practica Message Center LE voice/fax/data software. **PRO/CON:** Support policies include lifetime warranty, weekend tech support, cross-ship replacement; slowest modem on chart, minimal documentation. | 622 |

Best Buy  For expanded reviews, visit www.pcworld.com/t10modems.  Windows 95-certified Plug and Play  All products: 901

**HOW WE TEST** We test a pair of identical modems on a simulated phone network. For the phone line test, we send a text file over 55 line conditions. For the file type test, we send five files—graphics, text, program, and compressed file types, plus a mixture of these four types—over one line condition. We then average the results of the two tests. The overall rating is based on performance (43 percent), features (26 percent), price (12 percent), support (10 percent), and ease of use (9 percent). Data based on tests designed and conducted by the PC World Test Center. All rights reserved.

IN WHAT WILL probably be the last Top 10 chart before the onslaught of 56-kbps products, we find six new faces sprinkled among the old faves, including a new number one Best Buy—U.S. Robotics' Courier V.Everything. Zoom's FaxModem V.34I Plus earns the other Best Buy. For the first time, four modems on our chart come in under $100—a very welcome trend. For in-depth looks, see our modem roundup, "33.6 and Getting Faster." ■

# THE FIRST DESKTOP UPS

Finally, there's a UPS that belongs on TOP of your desk and not by your feet.

MINUTEMAN's new Pro Series packs a host of new features and unprecedented power protection in a tiny, ergonomic package, plus an unmatched three year-warranty.

Good looks may go a long way for some desktop products, but the Pro Series has so much more to offer PCs, servers, networks, and even telecommunications equipment:

- **Full protection from spikes and surges**
- **Battery backup during blackouts**
- **FAX/modem/data line protection**
- **Available with power management software (280 VA and above)**
- **Hot-swappable batteries**
- **Automatic battery management**
- **Intelligent microprocessor**
- **SNMP-ready (280 VA and above)**
- **Models range from 200 VA to 1400 VA**

Minuteman is the first company to offer you a smart UPS with automatic voltage regulation for under $100.

Call us to find out more about MINUTEMAN New Pro Series, and see why we say its the first UPS to reach the desktop.

MINUTEMAN
UNINTERRUPTIBLE POWER SUPPLY

**800-238-7272**

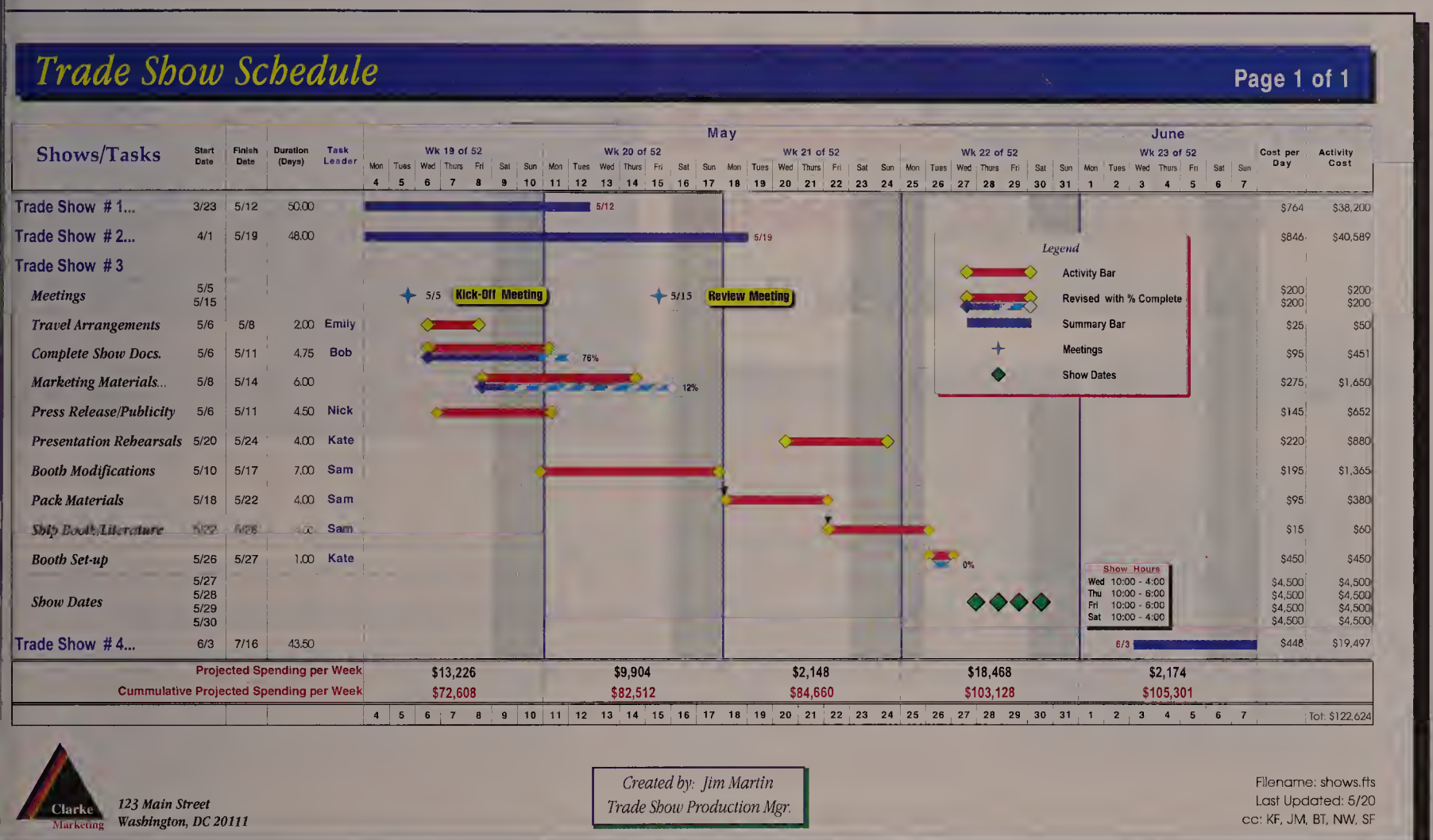
**www.minuteman-ups.com**

**MINUTEMAN UPS • 1455 LeMay Drive • Carrollton, TX 75007 • Phone: (972) 446-7363 • Fax: (972) 446-9011 • 24 Hour Info by Fax (800) 263-3933**

**Circle 168 on reader service card**

# Project Scheduling Made Easy.

New Version 5.0




**It's easy to use.** FastTrack Schedule is intuitive and flexible, meeting all your project scheduling needs. It works how you do, letting you schedule projects quickly, easily, but with the control your projects require. You don't have to be an expert in project management to keep your projects organized; you just need the right tool to get it done. It's that simple.

# FastTrack Schedule™

**It's easy to learn.** Can you afford to waste time learning software over and over again? Now you don't have to. With online help systems, tool tips, and bubble help, you'll have quick solutions at your fingertips. And with FREE and UNLIMITED technical support, you'll always stay on track.

*Simple Scheduling. Impressive Power.*

MONEY BACK GUARANTEE 30 DAY

**It's easy to buy.** We give you a free demo to try the software. If you like it, call us and we'll activate your demo on the fly. Plus FastTrack Schedule is 1/3 of the cost of most project management software, so it will fit your budget as well. Call today for a free demo or download it from our web site!

## Get on track!

Call to order, for more information or download a FREE DEMO today!

**(800) 450-1984**

**http://www.aecsoft.com**

Here are just some of the new features you'll find in Version 5.0:

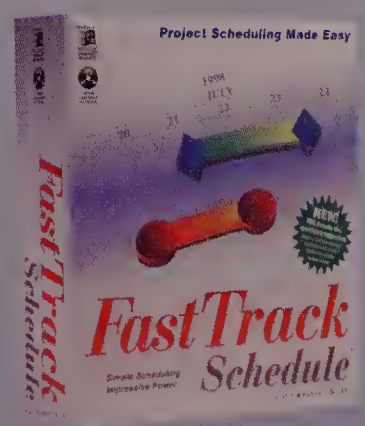
- Calculation Fields
- Time Period Summaries
- Choice Lists
- Legend Builder
- Column Summaries
- Export directly to HTML, GIF, JPEG
- Copy Page vs. Copy Schedule
- Right-Clicking
- Finish-to-Finish Linking

plus many more...

Upgrade to Version 5.0 Today!

Designed for Microsoft® Windows NT® Windows® 95

yes It runs with NetWare



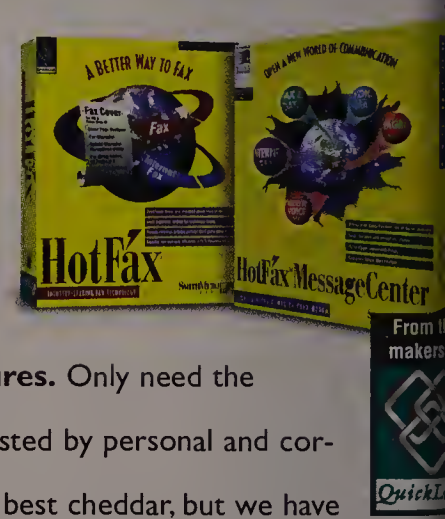

AEC Software, Inc., 22611-113 Markey Ct., Sterling, VA 20166, USA • Phone (703) 450-1980 • FAX (703) 450-9786 • http://www.aecsoft.com

1997 AEC Software, Inc. All rights reserved. Windows, Windows 95 and Windows NT are registered trademarks or trademarks of Microsoft Corporation. Macintosh is a registered trademark, and Power Macintosh is a trademark of Apple Computer, Inc.

Circle 14 on reader service card

# Twenty-one faxed orders, seventeen more in voice mail, and about a hundred pounds of cheese in an average day for the biggest little business around.

**HotFax® MessageCenter makes any small business a big cheese.** HotFax MessageCenter provides your small business or home office with all the tools to manage your communications. From your Windows PC, you can enjoy full-function faxing capability, complete with personalized cover page design and sophisticated management of incoming faxes. Use the revolutionary Internet Fax to send faxes anywhere in the world via the Internet and eliminate long distance charges. Create and customize an entire voice mail system – even send voice email over the Internet – to stay on top of those important orders. When you're on the road, HotFax MessageCenter keeps you in touch with automated notification of voice mail and faxes, and forwarding of email directly to your alphanumeric pager.




**HotFax® gives corporate users a serving of fax features.** Only need the faxing power of MessageCenter? HotFax is the package trusted by personal and corporate users around the world. We can't help you pick the best cheddar, but we have wrapped up the best total communication solutions available. For a taste, download a free demo from **www.smithmicro.com** or visit your nearest retailer.

**Communication for all of us.**

SMITHMICRO SOFTWARE
51 Columbia • Aliso Viejo, CA 92656
800.964.7674 • 714.362.5811
Nasdaq NMS: SMSI

©1997, Smith Micro Software, Inc. HotFax is a registered trademark of Smith Micro Software. All other trademarks and registered trademarks are property of their respective owners.

Circle 211 on reader service card

# ☑ YES! BILL ME LATER

Rush me one year (12 monthly issues) of PC WORLD for only $21.97. That's 69% off the annual cover price of $71.40. Plus I'll also receive a FREE CD-ROM loaded with over 60 shareware programs and more—just for trying PC WORLD.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

**Mail this card • Call 800-825-7595x501 • or Fax 415-882-0936**

Please allow 6-8 weeks for delivery of your first issue. Foreign orders please add $46 postage.
Canadian orders add $20 postage plus 7% GST (#R124669680).

**YOUR FREE GIFT!**

**The PC WORLD FREE CD-ROM-loaded with valuable shareware and more!**

# PC WORLD

4MPM3

Subscribe Online today!
http://www.pcworld.com

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

**BUSINESS REPLY MAIL**
FIRST-CLASS MAIL PERMIT NO 1262 BOULDER CO

POSTAGE WILL BE PAID BY ADDRESSEE

**PC WORLD**

SUBSCRIPTION DEPARTMENT
PO BOX 51833
BOULDER CO 80323-1833

# Help for Home Video, Garden Solutions

## STOP BUGGING ME

DESPITE YOUR BEST efforts, your green thumb has turned your garden into a dried-out shade of brown. What's wrong? Is it a fungus? Not enough water? **The Ortho Home Gardener's Problem Solver,** with its database of 700 problems that afflict flora from houseplants to plum trees, can help you determine what's ailing your plants and offer helpful suggestions on how to fix it. You can also use the Garden Journal to create garden to-do lists and maintenance schedules. Problem Solver's interface is intuitive and easy to navigate, and includes Internet links to Gardening .com (www.gardening.com), a virtual encyclopedia of all things green and growing. The CD-ROM is not for seasoned gardeners; they probably have most of what's included committed to memory. But for the rest of us, Problem Solver is a welcome basic reference. —*Angela Freeman*

**PESTS BEWARE: The Ortho Home Gardener's Problem Solver will help users maintain a beautiful garden.**

**The Ortho Home Gardener's Problem Solver**

GRADE: **B**; PRICE: $30 street; Books That Work; 800/242-4546; www.ortho.gardening.com

READER SERVICE NO. 625

## SOUR GRAPES

IF THIS CD-ROM were a wine, I'd say it's opaque and has a nasty nose, little flavor, and no follow-through. Ostensibly, **Wines of the World 3.0** is an improvement on the previous edition. Yet, like its predecessor, it offers scant information for wine lovers beyond generic fluff. Individual wine reviews lack depth and are hard to find due to the poorly designed database. The only real and welcome update is the link to excellent Web sites, where you'll find info on wine regions, grape varietals, wine tasting reports and reviews, and online stores. Skip the disc and go straight to the company Web site. —*Michael S. Lasky*

**Wines of the World 3.0**

GRADE: **F**; PRICE: $30 street; Multicom Publishing; 800/850-7272; www.multicom.com/cdjg/winegold/

READER SERVICE NO. 624

## FLICK TRICKS

DESCRIBING **You Don't Know Jack Movies** as a film trivia game is like calling *Naked Gun* a cop movie: It's accurate but misses the point. Like the first YDKJ, this irreverent game exists, first and foremost, to make you laugh. The questions, in categories like "Ron Howard's End," are silly and often tasteless, and the sarcastic narrator always has a quip ("Let me show you what somebody smart would have picked"). The more you know about movies, the better you'll score, but you'll have fun even if you lose. —*Lincoln Spector*

**You Don't Know Jack Movies**

GRADE: **A**; PRICE: $30 street; Berkeley Systems; 800/527-7440; www.berksys.com

READER SERVICE NO. 627

## Video Editing for Dummies

EVER TRIED TO condense video footage from your family vacation onto one reasonably interesting tape? It used to mean breaking the bank and devoting your adult life to mastering the equipment. But with **VideoDirector Studio 200,** you can edit all that long, boring vacation footage into snappy little (dare I say professional quality?) films even if you're all thumbs and your net worth is less than your family's collective IQ. With no cards to install, setup is easy. The TV dinner-size unit plugs in to the parallel port, a free serial port, a camcorder, and a VCR via a special cable. Adding titles, voice-overs, and music as well as transitions like wipes and dissolves is pretty painless. —Shane Mooney

**VideoDirector Studio 200**

GRADE: **A-**; PRICE: $299 list; Pinnacle Systems; 888/484-3366; www.videodirector.com

READER SERVICE NO. 626

**EASY EDITING: VideoDirector Studio 200 makes it easy to trim your home videos.**

EDITED BY
Christina Wood

### HUNKA BURNIN' CD-ROM

ELVIS HASN'T LEFT this building. Fans of the King can spend hours with him in **Virtual Graceland,** a two-disc CD-ROM. It begins with a guided tour in which a honey-voiced Southern belle takes you through the legendary estate of old swivel-hips. But the real fun starts when you ditch the guide and go beyond the velvet ropes. Virtual Graceland's seriously cool virtual reality interface allows you to just wander around. You'll find home movies and interviews with various FOEs (Friends of Elvis), song clips, and an endless parade of all things Elvis. Ambient sounds of people chatting and phones ringing make the experience eerily real—at one point I swear I heard the King call my name. Virtual Graceland avoids the kitsch and concentrates on Elvis, musical legend and family man. Home movies of Elvis with an infant Lisa Marie will warm the coldest heart. Well designed and boasting an intuitive interface, Virtual Graceland is a beautiful thing. Much like the man himself. Sniff. —*Glenn McDonald*

**LONG LIVE THE KING: Elvis lives on in Virtual Graceland, which lets you wander through the famous estate.**

**Virtual Graceland**

GRADE: **A**; PRICE: $50 street; Highway One Media Entertainment; 888/358-4723; www.virtualgraceland.com

READER SERVICE NO. 628

### MY MOTHER, MY PIM

EVER WISH YOUR mother were still around to manage your schedule? Well, **CyberMom,** a personal scheduler that comes packaged like a box of Tide, may be as close as you're going to get. A Tip of the Day reminds you of life's essentials ("Always go to the bathroom before you leave the house"). You schedule appointments, then set alarms using the Nag-o-Meter. You can also attach sticky notes to your desktop. Alas, unlike mom's cookies, this product is only half baked. There's a to-do list, but no address book. Want to set up monthly PTA meetings? Fahgeddaboutit. This is clearly a novelty product, not a serious scheduler. Spend your money on your real mom instead—she'll take better care of you. —*Daniel Tynan*

**CyberMom**

GRADE: **D**; PRICE: $24.95 list; Digital Entertainment; 800/728-4000; www.cybermom.com

READER SERVICE NO. 629

### SAT SMARTS

MTV ON A CD-ROM? With its slick graphics and hip teenage guides, you might think so. But no, it's **Acing the New SAT.** In their efforts to be cool, the designers forgot their goal: to provide guidance for the SAT. After you drag yourself around the first three levels, which offer fluffy test-taking tips and boring lectures, you finally get to the meat: sample tests that are really helpful. The feedback you get there is more useful than any of the earlier lectures. This product would be much more useful—though less hip—if the MTV image were toned down and more practice exams were provided. —*JoAnne Robb*

**Acing the New SAT**

GRADE: **C**; PRICE: $45 street; Princeton Teaching Associates Software; 888/728-8887; www.ptas.com

READER SERVICE NO. 630 ■

### F Y I

SHOPPING ON the Internet wins the number two position on American consumers' "Wish it was never invented" list. The reason? A fear of giving out credit card information over the Net.

SOURCE: CONSUMER MIND READER SURVEY IN *PREDATORY MARKETING* BY C. BRITT BEEMER

## KEEPING UP

### What's On Tonight?

THE ETERNAL QUESTION for channel surfers is, What's on? Now your Web surfing can help your channel surfing get focused. At www.clicktv.com you can search the TV listings in your area to find what basketball team is playing this weekend, if there's a Jerry Lewis movie on after midnight tonight, or whatever makes you grab for the remote.

### Cheap, Easy Book Shopping

LOOKING FOR a good book to read? Barnes & Noble (www.barnesandnoble.com) recently launched a shopping site that has more than deep discounts on all books (20 percent off all paperbacks and 30 percent off all hardcovers). You can search the Barnes & Noble inventory of 400,000 titles by all kinds of criteria, like author, category, new titles, and best-sellers. But the site will also recommend books it thinks you'll like. Tell it what books you've loved and hated. It compares your reviews to reviews by other readers, and suggests books that people with similar responses have recommended.

### Impulse Software

NO TIME to shop for software? Soon you'll be able to pick up the latest disks along with life's other necessities at the supermarket—right next to the videos, flowers, and books. Dallas-based Major Connections is pushing the trend by handling software selection, distribution, placement, and promotion. So far the company has signed up publishers like The Learning Company, 7th Level, and Graphix Zone and chains like Grand Union in the Northeast and Vons in California.

### Dream Vacations

YOU GET ONLY so many vacation days a year. But you can dream about vacations all year round. For that purpose, Salon magazine (www.salonmagazine.com) has launched a new travel section, Wanderlust. Notable writers—Isabel Allende, Peter Mayle, and others—will offer articles about experiences lived on the road. —**Christina Wood**

# The DIAMONDTRON advantage is now even bigger, sharper and clearer.

**Introducing the world's first .28mm, 21-inch (19.7" DVI*) aperture grille monitor.**

The new Diamond Pro 91TXM (21" CRT/19.7" diagonal viewable image) from Mitsubishi Electronics represents an unprecedented improvement in the way you'll look at monitors from this moment on.

MITSUBISHI DIAMONDTRON™ CRT TECHNOLOGY

Bright, vivid colors with superb contrast. Razor-sharp focus due to Mitsubishi's enhanced electron gun. High refresh rate for flicker-free imagery. On-Screen Display system with intuitive front-panel controls. All in an ergonomic, compact enclosure that fits easily into any workspace.

Best of all, the Diamond Pro 91TXM is available at the estimated selling price of $1,649, including a comprehensive 3-year warranty and support program to keep it working at peak efficiency. The new Diamond Pro 87TXM (17" CRT/16.0" diagonal viewable image) is also available, with an estimated selling price of $829.

Get all the details today—both on-screen and off—by calling Mitsubishi Electronics at **1-800-843-2515** in the U.S. and Mexico. In Canada call **1-800-387-9630**. *For immediate product specifications call Mitsubishi Qwikfax at* ***1-800-937-2094***. World Wide Web http://www.mitsubishi-display.com

Designed for Microsoft Windows'95 · Mac™ OS · Rated New Media Magazine Awesome · Windows Magazine 1996 Recommended · InfoWorld Top Score · Award-Winning DIAMONDTRON Technology · Computer Reseller News Test Center Recommended 1995 Fall Comdex '96 · MacUser Awards Editors' Choice 1996 Finalist · Diamond Pro 91TXM

MITSUBISHI DISPLAY PRODUCTS

©1997 Mitsubishi Electronics America, Inc. DIAMONDTRON is a trademark of Mitsubishi Electronics America, Inc.
Microsoft, Windows and the Windows logo are registered trademarks of Microsoft corporation. Mac and the Mac OS logo are trademarks of Apple Computer, Inc.
* DVI: Diagonal viewable image

**Circle 155 on reader service card**

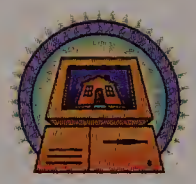
PC WORLD

# TOP 5 HOME PCs

| | SYSTEMS | Street price (4/1/97) | Overall rating | PC WorldBench score | Reliability/ service rating | Setup rating | Comments | Reader service number |
|---|---|---|---|---|---|---|---|---|
| 1 | Dell Dimension XPS M166s<br>800/388-8542<br>www.dell.com | $2349 | 90 | 223<br>outstanding | best/<br>best | fair | **FEATURES:** Pentium MMX-166, 32MB of SDRAM, 4GB hard drive,12X CD-ROM drive, 33.6-kbps fax-modem, 15-inch monitor. **PRO/CON:** Reasonably priced and loaded with hardware. Faster than some Pentium MMX-200s. Includes Microsoft Office Small Business Edition, but no other software. Mail-order only. Good home-office foundation. | 640 |
| 2 | HP Pavilion 5320<br>800/724-6631<br>www.hp.com/info/pchome1 | $1848 | 86 | 180<br>good | best/<br>good | outstanding | **FEATURES:** Pentium-150, 16MB of RAM, 1.6GB hard drive, 8X CD-ROM drive, 33.6-kbps fax-modem, 15-inch monitor. **PRO/CON:** HP's lowest-price, entry-level machine but lacks power for high-end multimedia titles. Software bundle includes Works, Encarta 97, Quicken SE, Hansel and Gretel, Great Word Adventure, and Magic School Bus. | 641 |
| 3 | HP Pavilion 7370V<br>800/724-6631<br>www.hp.com/info/pchome1 | $2948 | 85 | 222<br>outstanding | best/<br>good | outstanding | **FEATURES:** Pentium MMX-200, 32MB of RAM, 4GB hard drive,16X CD-ROM drive, 33.6-kbps fax-modem, 15-inch monitor, game pad, 3-D video card with 4MB of RAM. **PRO/CON:** Super muscle machine, perfect for serious gamers, but somewhat expensive. Includes Mech Warrior 2 for MMX, Whiplash, SimCity 2000, and MS Works. | 642 |
| 4 | HP Pavilion 7350P<br>800/724-6631<br>www.hp.com/info/pchome1 | $2748 | 84 | 200<br>good | best/<br>good | outstanding | **FEATURES:** Pentium MMX-166, 32MB of RAM, 2.5GB hard drive,16X CD-ROM drive, 33.6-kbps fax-modem, 17-inch monitor, built-in color scanner. **PRO/CON:** Great machine if you like to work with video, photos; expensive if you don't need image-editing software or scanner. Includes Adobe Photo Deluxe, Kai's Power Goo, and EasyPhoto. | 643 |
| 5 | IBM Aptiva C8E<br>800/426-7235<br>www.pc.ibm.com | $2398 | 82 | 212<br>very good | fair/<br>good | outstanding | **FEATURES:** Pentium MMX-166, 32MB of SDRAM, 3.1GB hard drive, 16X CD-ROM drive, 33.6-kbps fax-modem, 15-inch monitor. **PRO/CON:** Suitable for family fun and education. Affordable, but IBM's reliability rating has taken a downward turn (see Top 20 for details). Includes Lotus SmartSuite, Quicken SE, and Tuneland. | – |

Best Buy — All products: 904

**HOW WE TEST** The overall rating is based on reliability and service (30 percent), price (20 percent), PC WorldBench performance (20 percent), setup (10 percent), compatibility (10 percent), and extra features (10 percent). Reliability and service ratings are based on results of PC World's reliability and service survey.



SURPRISE, SURPRISE. For the eighth time in as many months, a Dell computer is at the top of the chart. And not too far behind Dell's lead are the three Hewlett-Packard machines that trailed Dell's system last month. So what's the news? We've got one new machine from Big Blue: IBM's Aptiva C8E.

Why is it so hard to knock the Dell and HP machines from the Top 5? One simple reason: reliability and service ratings. These two companies not only offer speedy home systems (compared to other home machines), but the companies that make them do well in our ongoing reliability and service survey.

The Dell Dimension XPS M166s—at number one for the second month in a row—has a killer combination of high speed and low price. Its one fault: You get only one software package, the useful Microsoft Office Small Business Edition. But at $2349, you can't go wrong.

Behind the number one machine are three in a row from HP—all easy to set up and loaded with software. At number two, costing $1848, the Pavilion 5320 is a bargain for anyone with average computing needs. But its poky PC WorldBench score can't keep up with the latest MMX PCs.

If playing games is your real motive for wanting a new computer system, the third-place HP Pavilion 7370V is a better choice. But despite a recent $200 price drop, it's still a tad expensive at $2948.

If you yearn to scan, edit, and distribute your photo album, then HP's Pavilion 7350P, with a built-in color scanner, is for you. A recent $300 price drop pushed it up a notch to number four. But at $2748, it still doesn't come cheap

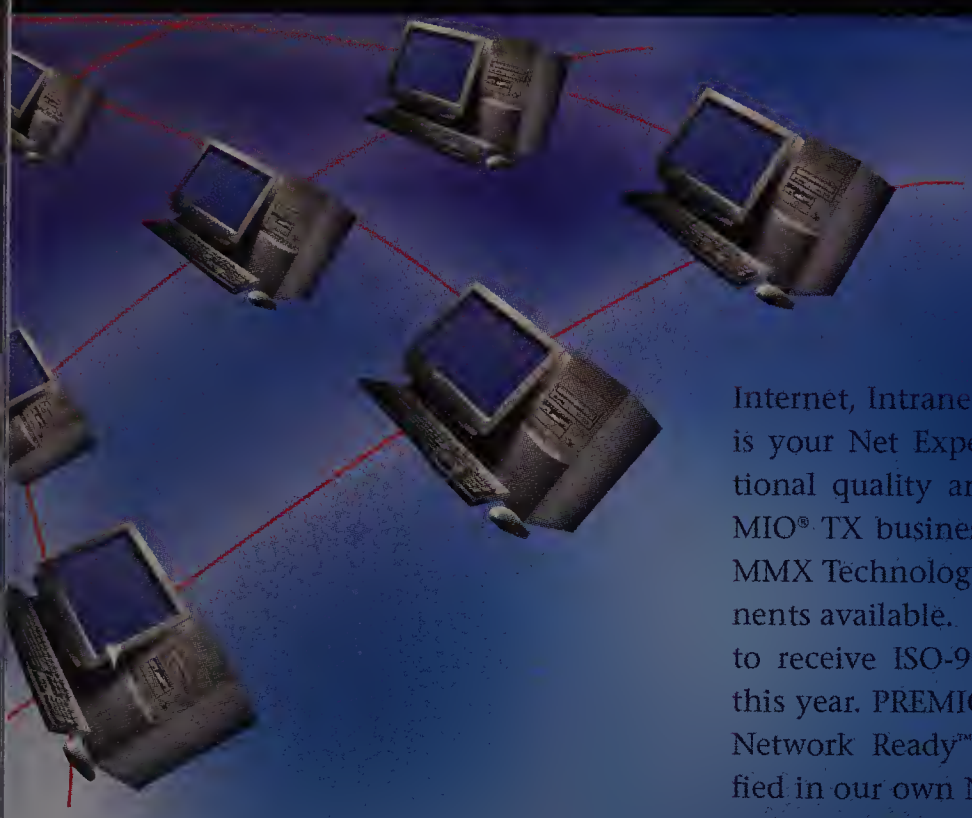
The news this month is IBM's Aptiva C8E at number five. The C8E is speedy, affordable (at $2398), and loaded with choice software. Its MMX processor and ATI Rage II 3D chip give it enough power to handle demanding multimedia titles.

We also looked at new systems from Quantex and CyberMax that didn't make the Top 5. Quantex's QP6/200 SM-2 is a Pentium Pro that scored a PC WorldBench rating of 225 and costs only $2399. For the same price, CyberMax's Pro Max 3 delivers thoroughbred speed (a 230 PC WorldBench score) and sports a built-in 5-by-7-inch color scanner.

—*Kirk Steers*

**IBM'S APTIVA C8E comes with software titles designed for MMX.**

*Kirk Steers is a contributing editor for* PC World. *Testing performed by Ulrike Diehlmann of the PC World Test Center.* ■



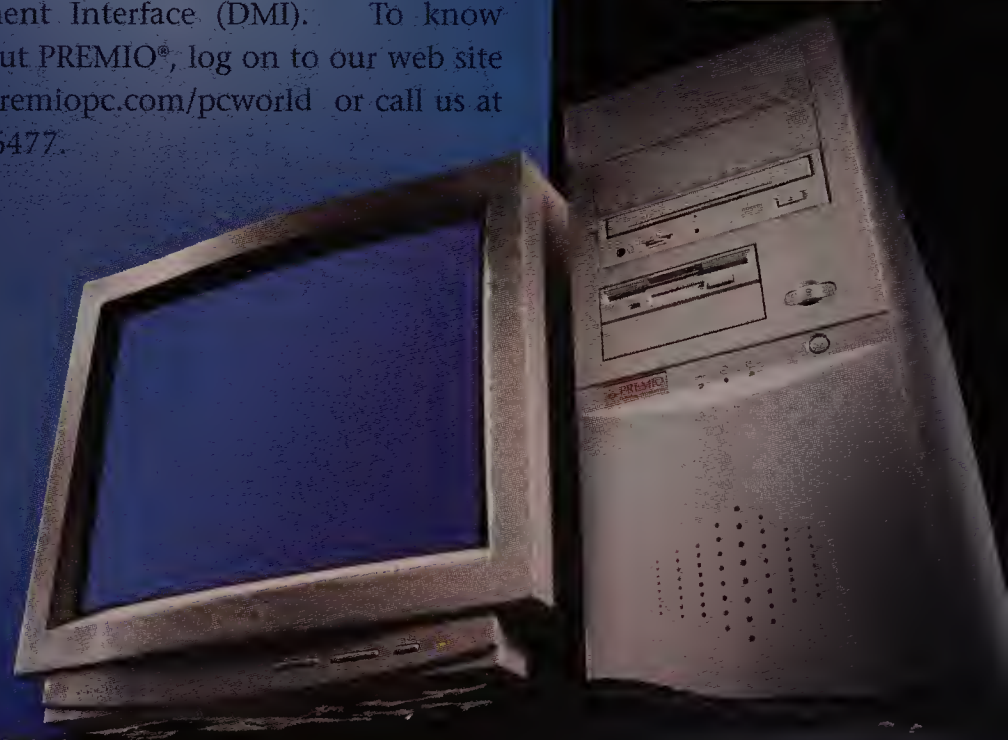
Internet, Intranet F[illegible] PREMIO® is your Net Expert. B[illegible] with exceptional quality and rel[illegible], the PREMIO® TX business desktops come with MMX Technology™ and the best components available. In fact, we are scheduled to receive ISO-9002 certification in July this year. PREMIO® TX systems are 3Com Network Ready™ and NetWare®YES certified in our own Novell® Labs approved test center. PREMIO® systems and workstations are optimized to run with Windows NT™, Solaris® and SCO® Unix. Therefore, they fit perfectly into any network of any size in any department. PREMIO® systems have received rave reviews from PC Magazine, PC World and Windows Magazine. Together with strong strategic alliance and fast time-to-market of the latest products, PREMIO® products increase your total benefit of ownership while decreasing maintenance cost with features such as the Desktop Management Interface (DMI). To know more about PREMIO®, log on to our web site at www.premiopc.com/pcworld or call us at 800-677-6477.

- Fast Pentium® 166MHz/200MHz processor-based systems with MMX technology™
- 16MB or more RAM, 2.0GB or higher HDD, 16X CD-ROM and quality components from 3Com®, ATI®, Adaptec®, Intel™ and others.
- 3Com Network Ready Partner™
- Optimized for 32-bit environment and Windows NT™ Windows® 95, NetWare® 4.x, Solaris® and SCO® Unix compatible, DMI-enabled
- NetWare® YES certified in PREMIO's Novell® Labs approved test center
- Pending ISO-9002 certification
- 3-year warranty with optional on-site service
- Toll free technical support
- GSA and CMAS approved

MMX™ intel inside pentium® PROCESSOR

# Premio Systems are Net perfect™

Any Net, Any Where



PREMIO®

800-677-6477

www.premiopc.com/pcworld

PREMIO is a registered trademark of Premio Computer, Inc. Intel, the Intel inside logo, Pentium and the Pentium Processor logo are registered trademarks of Intel Corporation. All other trademarks and brand names are the property of their respective owners.

Circle 192 on reader service card

THE POWERVR REVOLUTIONARIES

INTERVIEW

# DIVA LA REVOLUCIÓN

omb Raider's Fiery Lara Croft is one of the most recognized figures of the owerVR™ Revolution. A confrontationalist, she has grown tired of the old D Order. With passion and anger, Lara has been relentlessly fanning the ames of revolutionary justice for gamers around the world.

## ELCOME TO THE MOVEMENT. PPARENTLY, DISCOVERING ANCIENT OMBS HAS FAILED TO SATISFY THE ADICAL HUNGERS THAT GNAW AT OUR SOUL?

ara Croft: My first passion will always be xploring ancient civilizations. But when I alized gamers were being kept down by ferior 3D technology, I went balistic. m busting my arse to get gamers the 3D xperience they deserve.

## O THE BLAND 3D EXPERIENCE WAS OUND TO PRODUCE A REVOLT?

Absolutely. But this is an armed struggle, ve. And the weapon is not the Colt .45 in y hand. It's the PowerVR 3D technology that ill topple the bloody awful 3D experience.

## RE YOU SAYING EVERYTHING ABOUT ONVENTIONAL 3D TECHNOLOGIES ESERVES TO PERISH—SHOVED OFF O THE ASH HEAP OF OBSOLESCENCE?

: Bloody right, mate. Gamers want 3D echnology that liberates their experience. Like igher resolution. Higher frame rates. Effects hat take them as close to reality as you can get.

## IBERATION SEEMS TO BE A CENTRAL HEME DRIVING THE MOVEMENT.

: Look, if I could escape the suffocating arrogance f snooty British society, gamers could overthrow he forces trying to smash the PowerVR resistance. hat's what pumps adrenaline through my body.

## UM, DON'T TAKE THIS THE WRONG WAY LARA, BUT THAT'S SOME BODY.

L: Actually, you should see it at 800x600 resolution. I think you'd dig my aerial flips with realistic shadows.

## WHEW, WELL, UH...SO LARA, THESE ARE EXCITING, TURBULENT TIMES. GAMERS AND GAME DEVELOPERS SEEM TO BE GETTING SWEPT UP IN THE PROMISE OF POWERVR.

L: That's right. Our freedom fighters are developing games right now that are PowerVR Ready. Eidos, Kalisto, Shiny, Sega Entertainment, FASA, Activision, Core Design, Gremlin. All feverishly churning out PowerVR Ready titles, including my next adventure, Tomb Raider 2.

## WOULD YOU SAY THE MOVEMENT IS OBSESSED WITH POWER?

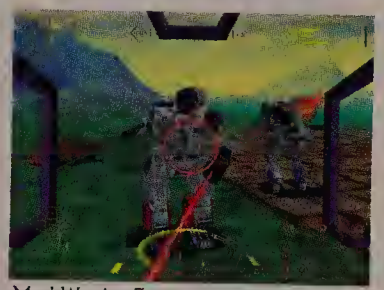
L: Of course, you twit. Frankly, we're not stopping until we have profoundly altered 3D reality for all gamers. And we will! Because we have finally seized the ultimate apparatus of real 3D power.

## THE POWERVR TECHNOLOGY?

L: Yes. And with it, there will be no obstacles that can stand in the way of the mission of the PowerVR revolution: to produce the most realistic game experience imaginable. Now bugger off, I've got a battle to fight.

Tomb Raider

MDK


MechWarrior 3

POWERVR READY

Demand PowerVR Ready hardware and games.
It is your right.

www.powervr.com
800-366-9782

VideoLogic · electronics boutique · Ubi Soft · kalisto · PSYGNOSIS · FASA INTERACTIVE · Shiny · GATEWAY2000 · EIDOS INTERACTIVE · NEC

997 NEC Electronics Inc. PowerVR & PowerVR logo are trademarks of VideoLogic Ltd. Tomb Raider©™ 1996, Core Design Ltd. ©® 1996, Eidos Interactive Ltd. Lara Croft and her likeness are trademarks of Eidos, Plc. All rights reserved. All other trademarks and logos are the property of their respective holders.

Circle 223 on reader service card

# Sizzling CPUs and Other Horror Stories

WHEN I WAS in grad school, I owned a VW bus—a great car! On long trips I could wrap cinnamon buns in aluminum foil and heat them in the engine compartment. What's good for cinnamon buns, though, isn't good for my CPU.

I found this out the hard way recently when my computer started acting weird. I'd be writing a column, and out of the clear blue the system would lock up. Or it would simply start acting erratically—programs would stall for a minute and then start working again. (Therapy was out of the question; the problems seemed too bizarre.)

I did all the standard things—looked for viruses, ran Scandisk, and tried a few diagnostic programs. No luck—everything checked out A-OK.

I posted a message to the technical jocks on *PC World*'s CompuServe forum (Go PCTECH). These folks have answered dozens of my arcane computing questions with witty, on-the-money answers. (If you have access to CompuServe, try it—the forum is free.) The problem, they said, sounded like some hardware component going south, a bad SIMM, or maybe a heat problem.

So I stuck my head under the computer's hood. Bingo! The cooling fan on top of the CPU wasn't working. My CPU was hot enough to warm a cinnamon bun.

A computer's biggest enemy is sizzling temperatures. I did a little research and learned that according to Intel, a CPU shouldn't get any hotter than 90 degrees Celsius (roughly 190 degrees Fahrenheit). Intel also said that for every rise of 10 degrees Celsius above the operating range, the mean time between failures is cut in half. With the fan broken, my CPU's life span was starting to look shorter than most of my summer vacations. (If you don't believe me, look for yourself: developer.intel.com/design/pentium/applnots/241575.htm.)

> My **CPU** was **hot** enough to warm up my morning **cinnamon bun.**

### KEEPING COOL

THERE WAS NO question I had to replace that fan quick. But no way did I want another chintzy fan; I had to have the Cadillac of fans.

I talked with the people at PC Power & Cooling, the company that's famous for power supplies. They also sell fans, and they sold me one: a $22 CPU-Cool 1.9W. The fan is integrated into a die-cast heat sink, and the company says it will keep my CPU at a comfortable 90- to 120-degrees Fahrenheit. (Unfortunately, I have no way of testing that claim.) The CPU-Cool also uses ball bearings rather than sleeve bearings and is warranted for five years. Besides, the CPU-Cool *looks* a heck of a lot more reliable than my old fan.

Pulling out the old fan, disconnecting it from the power lead, and installing the new one was a satisfying, 10-minute job.

### COOL ME DOWN

OKAY, CALL ME paranoid, but I wanted an extra cushion of safety—two, actually.

For another $22, I picked up PC Power & Cooling's 110 Alert heat alarm. This little gizmo connects to a spare power lead. If the inside of my computer's case goes above 110 degrees Fahrenheit, a loud, obnoxious alarm sounds, alerting me and causing the dog to bolt from the room.

It gets cooler: I picked up T.S. MicroTech's $22 FanCard II, a slim expansion board with two fans. It takes up a 16-bit slot on the system board and keeps the air circulating. It needs only 5 watts of power, and installation takes no time or skill.

Feeling *really* concerned? Consider Macrotron's $99 HeatSentry, an 8-bit ISA add-in card that monitors your system's insides with two heat probes. If your PC gets hot under the collar while you're away, the card will dial your modem and page you (though it won't help you explain to your date why your computer needs you *right now*).

The moral? Keep your computer cool and warm your buns in the microwave (unless you have a VW bus).

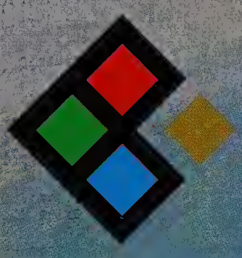
**110 Alert, CPU-Cool 1.9W**
$22 list each; PC Power & Cooling, 800/722-6555; sales@pcpowercooling.com, www.pcpowercooling.com
READER SERVICE NO. 637

**FanCard II**
$22 street; T. S. MicroTech; 800/959-9419; www.fancard.com/
READER SERVICE NO. 638

**HeatSentry**
$99 list; Macrotron Systems Inc., 510/683-9600; www.macrotronusa.com
READER SERVICE NO. 639

PC World *Contributing Editor Steve Bass is a licensed marriage and family therapist and the president of the Pasadena IBM Users Group. He can be reached on PC World Online.* *See page 14 for contact information.* ■

# When This Is Your Limit

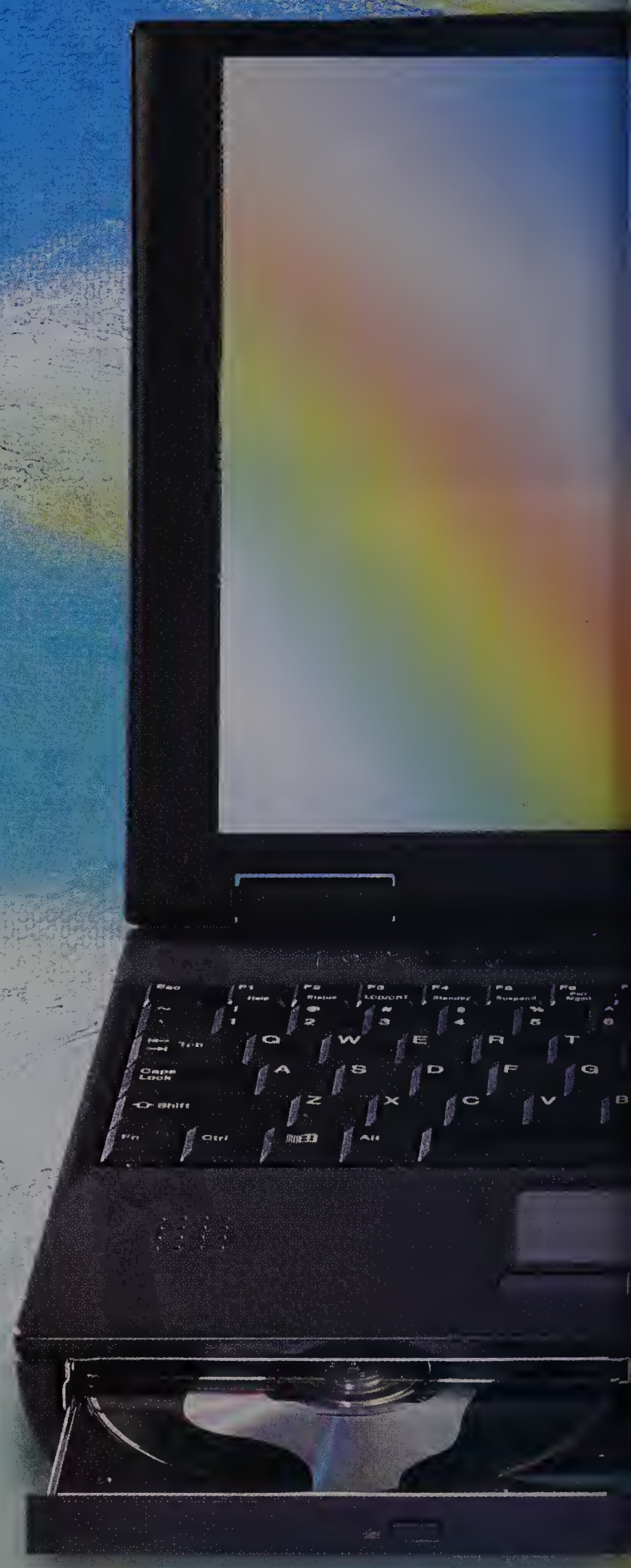


GATEWAY2000
S O L O™

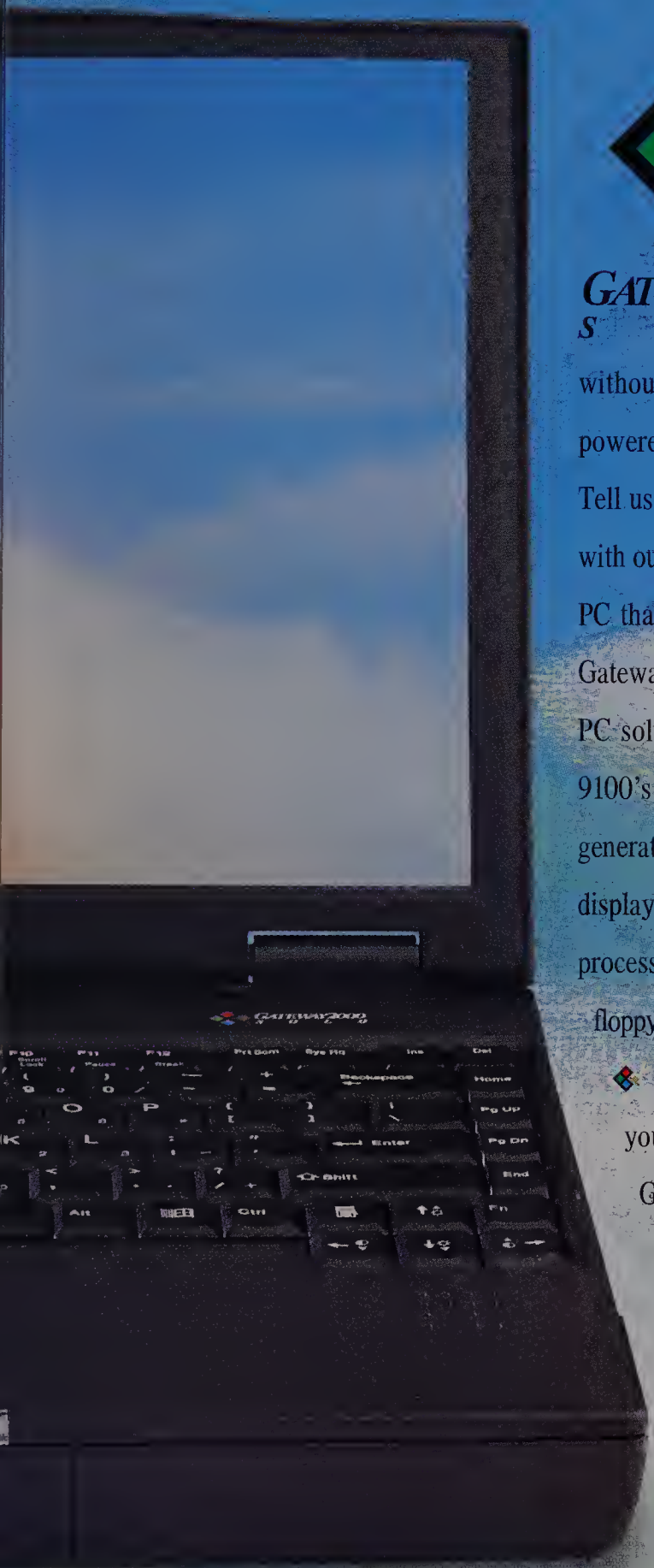
*On the road or in the office, Gateway Solo portable PCs have the computing solution. Our Gateway Solo 9100 notebook packs the rich features of a desktop PC into a portable package.*

*Just plug your Gateway Solo portable PC into the Gateway Solo Docking Station and it's transformed into a desktop configuration that connects to external monitor, keyboard and peripherals in one step. You can even dock your Gateway Solo PC without rebooting it.*

*Gateway builds fresh technology into all our portable PCs to help extend their useful life spans. The Gateway Solo 9100 notebook features Intel's Mobile Modules Operation card — it's a combination of the processor, cache and a portion of the core logic chipset in a modular component.*



# We can get you there.



GATEWAY2000
S O L O™

Portable PCs should be as diverse as the people who use them. Some customers need a large number of notebook PCs that get the job done without blowing their technology budget. Others need high-powered PCs that can handle both desk duty or road work.

Tell us your mobile computing goal and we'll help you get there with our Gateway Solo™ portable PC line. How about a portable PC that can double as a desktop system? The Gateway Solo 9100 was designed to be the one PC solution for both environments. The 9100's 13.3-inch diagonal screen features next-generation XGA LCD display technology. The display system, connected with an Intel Pentium® processor with MMX™ technology, and a combination CD-ROM/floppy drive, blasts your multimedia applications into the stratosphere.

MMX™ intel inside pentium® PROCESSOR

But what if your quest is for an affordable complement to your existing desktop PC? No problem. Gateway offers the Gateway Solo 2100 and 2200 notebooks. Plenty of power at a cost that allows you to outfit your entire road crew.

Flexible, effective portable computing solutions custom configured for each customer. The journey to your portable PC goals starts with Gateway 2000. Call us today.

GATEWAY2000
*"You've got a friend in the business."®*

**888-888-2022**

# Gateway Solo™ Portable PCs

## 2100SE

- 11.3" SVGA Dual Scan Color Display
- Intel® 120MHz Pentium® Processor
- 16MB EDO DRAM (expandable to 72MB)
- 256K Pipelined Burst Cache
- 1MB EDO Video RAM
- Zoomed Video Port
- 1GB Hard Drive
- Modular 3.5" Diskette Drive
- Modular 6X min/11X max CD-ROM Drive
- 16-Bit Sound & Stereo Speakers
- NiMH Battery & AC Pack
- 85-Key MS® Windows® 95 Keyboard
- EZ Pad® Pointing Device
- Casual Carrying Case
- Microsoft® Windows 95
- MS® Works 95
- Gateway Gold™ Service and Support for Portable PCs

**$1999** *Business Lease* $74/mo.*

## 2200SE

- 12.1" SVGA Active Matrix Color Display
- Intel 120MHz Pentium Processor
- 24MB EDO DRAM (expandable to 80MB)
- 256K Pipelined Burst Cache
- 2MB EDO Video RAM
- Zoomed Video Port
- NTSC/PAL Video Output
- 1GB Hard Drive
- Modular 3.5" Diskette Drive
- Modular 6X min/11X max CD-ROM Drive
- 16-Bit Wavetable Sound & Stereo Speakers
- NiMH Battery & AC Pack
- 85-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Casual Carrying Case
- MS Windows 95
- MS Works 95
- Gateway Gold Service and Support for Portable PCs

**$2799** *Business Lease* $103/mo*

## 2200LS

- 12.1" SVGA Active Matrix Color Display
- Intel 166MHz Pentium® Processor with MMX™ Technology
- 32MB EDO DRAM (expandable to 80MB)
- 256K Pipelined Burst Cache
- 2MB EDO Video RAM
- Zoomed Video Port
- NTSC/PAL Video Output
- 2GB Hard Drive
- Modular 3.5" Diskette Drive
- Modular 6X min/11X max CD-ROM Drive
- 16-Bit Wavetable Sound & Stereo Speakers
- Lithium Ion Battery & AC Pack
- 85-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Casual Carrying Case
- MS Windows 95
- MS Office 97, Small Business Edition plus Encarta® 97
- Gateway Gold Service and Support for Portable PCs

**$3849** *Business Lease* $141/mo.*

## 9100LS

- 13.3" XGA Active Matrix Color Display
- Intel 150MHz Pentium Processor with MMX Technology
- 24MB SDRAM
- 256K Pipelined Burst Cache
- 4MB Video RAM
- USB & Zoomed Video Ports
- NTSC/PAL Video Input And Output
- 2GB Hard Drive
- Modular Combo 6X min/11X max CD-ROM Drive & 3.5" Diskette Drive
- 16-Bit Wavetable Sound & Stereo Speakers
- 33.6 PCMCIA Data**/14.4 Fax Modem
- 12-Cell Lithium Ion Battery & AC Pack
- 88-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Casual Carrying Case
- MS Windows 95
- MS Office 97, Small Business Edition plus Encarta 97
- Gateway Gold Service and Support for Portable PCs

**$4799** *Business Lease* $176/mo*

## 9100XL

- 13.3" XGA Active Matrix Color Display
- Intel 166MHz Pentium Processor with MMX Technology
- 64MB SDRAM
- 256K Pipelined Burst Cache
- 4MB Video RAM
- USB & Zoomed Video Ports
- NTSC/PAL Video Input And Output
- 3GB Hard Drive
- Modular Combo 6X min/11X max CD-ROM Drive & 3.5" Diskette Drive
- 16-Bit Wavetable Sound & Stereo Speakers
- 33.6 PCMCIA Data**/14.4 Fax Modem
- Two 12-Cell Lithium Ion Batteries & AC Pack
- 88-Key MS Windows 95 Keyboard
- EZ Pad Pointing Device
- Deluxe Carrying Case
- MS Windows 95
- MS Office 97, Small Business Edition plus Encarta 97
- Gateway Gold Service and Support for Portable PCs

**$5999** *Business Lease* $220/mo*

## Peripheral Options

- Upgrade From Casual Carrying Case To Deluxe Carrying Case **$25**
- Gateway Solo Mini Docking Station **$199**
- Gateway Solo Docking Station **$599**
- 33.6 PCMCIA Data**/14.4 Fax Modem **$200**
- 2100/2200 Lithium Ion Battery **$190**
- 9100 Lithium Ion Battery **$250**
- PCMCIA 3Com® Ethernet Twisted Pair Adapter **$129**
- PCMCIA 3Com Ethernet TP/BNC Combo Adapter **$159**
- PCMCIA Token Ring Adapter **$399**
- Call for additional details about memory, processors and hard drive options.

***Maximum data transfer rate dependent on certain variables including particular modems with which you are communicating, telephone lines, communications software and communications protocols.*

Toll free from Canada
800-846-3609

Toll free from Puerto Rico
800-846-3613

**888-888-2022**

www.gateway.com

©1997 Gateway 2000, Inc. GATEWAY 2000, black-and-white spot design, "G" logo, EZ Pad and "You've got a friend in the business" slogan are registered trademarks, and GATEWAY, Gateway Gold and Gateway Solo are trademarks of Gateway 2000, Inc. The Intel Inside Logo and Pentium are registered trademarks, and MMX is a trademark of Intel Corporation. All other brands and product names are trademarks or registered trademarks of their respective companies. All prices and configurations are subject to change without notice or obligation. Prices do not include shipping or applicable sales tax. Many Gateway 2000 products are custom engineered to Gateway 2000 specifications, which may vary from retail versions of the software and/or hardware in functionality, performance or compatibility. *Leasing arranged by independent leasing companies to qualified commercial customers. Lease payments based on 36-month term. Lease terms subject to change without notice or obligation.

*The Gateway Solo 9100 features the Intel Pentium® processor with MMX™ technology.*

**Gateway Solo Mini Docking Station**
**$199**

## Power and Service

Whether on the road or at your desk, Gateway Solo™ portable PCs offer flexibility that helps you achieve your goals. We back it up with Gateway Gold™ Service and Support.◆ Our award-winning, toll-free technical support is available 24 hours a day, seven days a week.

**Limited Warranty and Guarantee.**◆ Each portable system carries a one-year limited warranty. (Shipping charges to and from the customer are not refundable.)

**Gateway On-Line.** Our popular World Wide Web site, www.gateway.com, is a great place to check out the latest tech support tips, product features, component add-ons and current pricing.

***GW2k®: Gateway Magazine.*** Our quarterly magazine is designed to help you get the most out of your Gateway 2000 connection. It includes useful tech tips, industry news and more.

*◆Please write or call for a free copy of limited warranties or guarantees, on-site service and installation agreements. Our address is Gateway 2000, 610 Gateway Drive, North Sioux City, South Dakota, 57049-2000.*

**Gateway Solo Docking Station**
**$599**

### *Microsoft® Office 97 Small Business Edition plus Encarta 97*

- MS® Word 97
- MS Excel 97
- MS Publisher 97
- MS Automap® Streets
- MS Outlook™ 97
- MS Small Business Financial Manager
- MS Encarta® 97

### *Service & Warranty*

- Portable-specific toll-free service and support.
- One-year limited warranty standard. For a free copy, call or write.

GATEWAY2000

*"You've got a friend in the business."®*

**888-888-2022**

www.gateway.com

MMX™ intel inside pentium® PROCESSOR

# HERE'S HOW

ANSWER LINE

## Can Your System Handle Windows 95 or NT?

I'VE BEEN RELUCTANT to upgrade from Windows 3.1 to Windows 95, partly for fear that my PC couldn't handle the burden. I'm finally ready to make the move, but I'm wondering whether I should leapfrog over Windows 95 and go straight to Windows NT 4.0. Is there an easy way to see how well my PC would handle Windows 95 or NT?

*Joan Meldahl, Cleveland*

WINDOWS 95 and Windows NT 4.0 require about the same amount of system resources. However, NT doesn't support as many hardware devices as Windows 95 does, and either environment could be too much for an older system.

To check out your PC's readiness, call on a pair of free Microsoft tools. The Windows 95 System Check (available at www.microsoft.com/windows/windows95/info/w95pcready.htm) checks processor speed, memory, and hard disk space. It also checks for installed applications that are incompatible with Windows 95, although it doesn't tell you whether your system is Plug and Play.

The weightier Microsoft Compatibility Tool version 1.0 for Windows NT 4.0 (see **FIGURE 1**) reports on your PC's ability to run Windows NT Workstation or Server. It also tells you which of your installed boards and peripherals are on the Hardware Compatibility List. You can download the tool from www.microsoft.com/kb/articles/q163/0/03.htm. In Explorer, double-click **ntcomp.exe** to decompress its contents, then run **setup.com**. You'll need two floppy disks to run the test.

**FIGURE 1: BEFORE YOU UPGRADE to Windows NT, use Microsoft's Compatibility Tool to make sure your system can handle NT.**

### SEND FILES TO THE RECYCLE BIN FROM DOS

I USE MY DOS PROMPT instead of Win 95's Explorer to copy and delete files. But sometimes I accidentally delete files that I didn't want to lose. I'd like to be able to send files to the Recycle Bin from the command line so that I can recover a file sent there by mistake. How do I do this?

*Django Dunn*
*Vancouver, British Columbia*

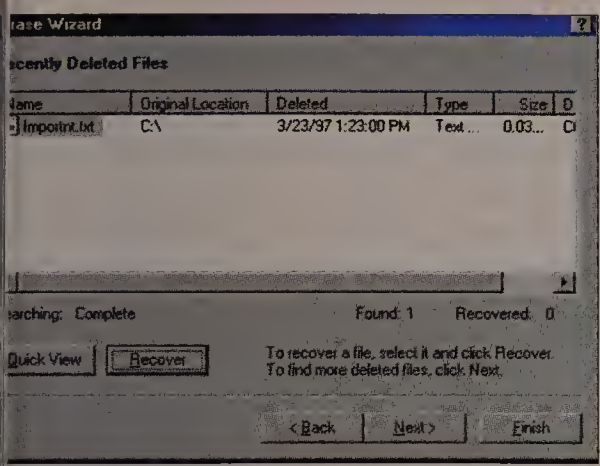
UNLESS YOU DISABLE the Recycle Bin (in its Properties sheet, select *Do not move files to the Recycle Bin*), when you delete a file from Explorer or a 32-bit application's File Open dialog box, it's moved to a hidden folder named Recycled on the same drive.

If that were all that happened, you could write a batch file that does the same thing and replaces the DOS del command. But simply moving files to the Recycled folder isn't enough. They don't show up in the Recycle Bin's display, and they aren't deleted when you empty the Recycle Bin.

To get a DOS prompt del command, download T.N.C. Venkata Rangan's excellent delete.exe freeware utility from PC World Online. Delete.exe accepts all the command-line switches in Win 95's and NT's del commands, but it engages the Recycle Bin the way the command should.

Even better, if you own Norton Utilities

ILLUSTRATION: PETER COATES




**URE 2: EXTEND RECYCLE BIN'S safety net to S with Norton Utilities' UnErase Wizard.**

for Windows 95, use its Protected Recycle Bin/UnErase Wizard (see **FIGURE 2**) to extend the Recycle Bin protection to the DOS prompt. It also tracks files deleted within applications (including those that don't send a copy to the Recycle Bin).

Norton Utilities 2.0 for Windows 95 $80 street; Symantec; 800/441-7234; www.symantec.com

READER SERVICE NO. 667

## UNLOCK POLICY EDITOR

AFTER READING about Windows 95's System Policy Editor in *PC World* recently ("Undocumented Secrets: 101 Tips for Windows 95, NT, and 3.*x*," tip 87, March), I decided to try it to protect my Windows configuration. I enabled the Program Restriction setting and exited Policy Editor to see what effect it had. Guess what? I can no longer run any programs, including System Policy Editor and the Registry Editor. How can I undo this setting?

*Steve Reinisch, Ottawa, Ontario*

OUCH! Fortunately for you, Windows 95's security is like Swiss cheese. Choose *Start•Shut Down•Restart the computer,* and when you see the 'Starting Windows 95' message, press **<F5>** to load Windows in Safe Mode. Safe Mode skips Policy Editor's restrictions and lets you run the program and undo the damage.

For future reference, don't restrict Windows from running apps. But if you have a good reason to do so (to keep the kids from browsing the Web, say), add poledit.exe and any programs you want users to be able to run to the allowed applications list. To do that, run **poledit**, double-click *Local User•System•Restrictions,* and check *Only run allowed Windows applications.* Click *Show,* then *Add,* and enter the executable file name of each program.

To protect your settings, don't install poledit.exe on your hard disk. Run it from the CD-ROM, then hide the disc.

## IS YOUR FLOPPY CONTROLLER FAST ENOUGH?

IN HIS FEBRUARY review of backup hardware, "Better Safe Than Sorry," Mike Hogan states that newer computers generally use 1-mbps floppy controllers. He also says that Iomega's Ditto 2GB tape backup drive won't work with the 512-kbps controllers in many older systems. Before I spend $39 on Iomega's 2-mbps Ditto Dash controller, how can I find out the speed of my current floppy controller?

*Shirley Birenz, Wyckoff, New Jersey*

IT'S NOT JUST older systems that sport the slower floppy controllers. Pentiums may incorporate 512-kbps controllers, while some 486 systems use 1-mbps controllers. On Iomega's Web site, or that of another tape drive maker, you may expect to find free utilities that report your controller's speed—but such is not the case.

Exabyte has the tool you need, a 9.4K DOS program called fdetect.exe. To get it, send a request to support@exabyte.com. You'll get a return message with the program attached in UUencode format. (By the time you read this, Exabyte will probably have posted the utility on its Web site, www.exabyte.com.) If your mail program can't handle UUencoded attachments, you'll need to save the message contents as a file and use a third-party decoder.

Even if you have a 1-mbps controller, you may still want to upgrade. A 2-mbps controller like the Ditto Dash or Exabyte's 2Mbit Accelerator Card will speed up backup and restore operations noticeably.

## DUAL-BOOT WITH WIN 95 OSR2

I RECENTLY PURCHASED a system that had Windows 95 4.00.950B installed, the new Service Release 2 available only with new computers. Not about to let an old dinosaur die, I would like to have a setup that will let me boot to either DOS 6.22 or Windows 95.

When I upgraded from Windows for Workgroups 3.11 to Windows 95, DOS 6.22 was included on the disk. As I recall, if I load 6.22 from the DOS setup disks, io.sys, msdos.sys, and command.com will change to 6.22 configuration, and Windows 95 probably won't boot. Is there a way to load DOS 6.22 in a dual-boot configuration with Windows 95?

*Mark Phillips, Albany, Oregon* ▶

By Scott Spanbauer

## CONTENTS

**ANSWER LINE**
274 Windows 95 and NT system requirements, a Recycle Bin for DOS
275 Policy Editor restrictions, tape backup speed, dual-booting
276 Microsoft's free Camcorder

**WINDOWS TIPS**
278 Disable Call Waiting and Startup apps
280 Bootable floppies, a print directory command, add file management to dialog boxes
282 Windows NT's Task Manager

**SPREADSHEETS**
284 Hyperlinks in Excel, an annotated calendar

**WORD PROCESSING**
286 Default Word formats, select large blocks of text with the keyboard
288 Foreign Word styles, WordPerfect's TextArt, fix Word Pro's glossary bug

**DATABASE TIPS**
292 Hyperlinks in Access

**INTERNET TIPS**
296 56-kbps modems, tech support on the Web, bookstores on the Web
298 Dial-up Shortcut, print Web page text, browse FTP sites, a dictionary of hackerspeak

**HARDWARE TIPS**
304 Select memory for an upgrade

**MULTIMEDIA TIPS**
306 Edit digital video

**UPGRADE GUIDE**
308 Replace your PC's motherboard

INTERNET

online

DON'T MISS ADDITIONAL HERE'S HOW information at **www.pcworld.com/hereshow.**

OEM SERVICE RELEASE 2 (OSR2) does not support dual-booting with DOS, which you may still want to do to run DOS games and applications that balk at Windows 95 or Windows 3.1. You can press <F4> during start-up to boot to your old version of DOS, but there's a bug: That's the last time the computer will boot from the hard disk. Better have a Windows 95 Startup disk on hand (choose *Start•Settings•Control Panel•Add/Remove Programs•Startup Disk* to create one).

Microsoft says it's working on a fix, but in the meantime, an enterprising German hacker named Joerg Wespe has written a free utility, W95Boot, that makes your system bootable again and gives OSR2 the ability to dual-boot with DOS. You can download w95boot.zip, which contains the program and documentation, from www.tu-chemnitz.de/~jwes/win95boot.html. Unzip the file, copy w95boot.exe to a Windows 95 or DOS 6.*x* boot floppy disk, then boot with the floppy and run the program. The next time you boot up, you'll get the choice you want.

If you just bought a new system and aren't sure whether OSR2 has been installed, here's how to find out. Right-click *My Computer,* choose *Properties,* and click the *General* tab. If it says 'Windows 95 4.00.950' or '4.00.950a' under 'System', dual-boot all you want. If you see '4.00.950B', you'll have to follow the instructions above.

online *Find files from this article at www.pcworld.com/software_lib/ and more tips at www.pcworld.com/hereshow.* Answer Line *welcomes your questions and pays $50 for published items. Contributing Editor Scott Spanbauer is author of* The No B.S. Guide to Windows 95 *(No Starch Press, 1996, 800/420-7240). See page 14 for contact information.* ■

## Put Your Screen in Movies

**UNTIL NOW, the only way to record on-screen activity for demos or tutorials had been to use Lotus's $100 ScreenCam utility. Microsoft changed all that with a Camcorder tool that captures your screen as an .avi movie or .exe file. The utility is available for free on Microsoft's Web site (www.microsoft.com/OfficeFreeStuff). Compare it with Lotus's ScreenCam97 by downloading a demo version from www.lotus.com/screencam/213a.htm.**

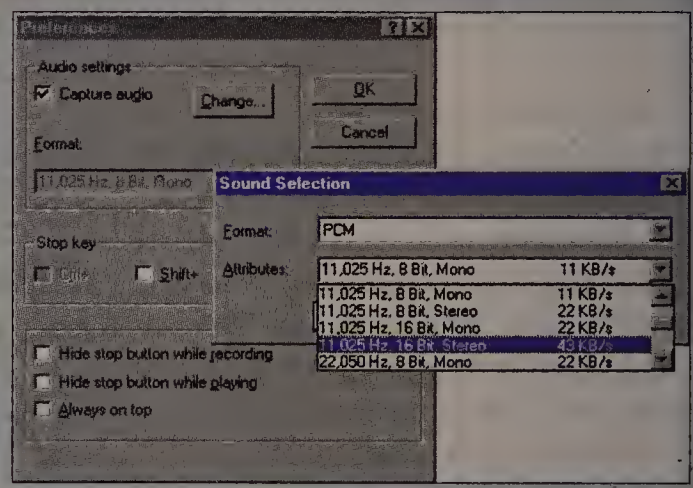


Photo by Neal Brown

**Research in cities across America has revealed that money does in fact grow on trees.**

Parks and open spaces
don't just make cities more beautiful.
They attract business
and do wonders for the economy.
That's why, for more
than 20 years, we've been conserving
land for people.
Now we need your help.
Call 1 800 714 LAND.

THE TRUST FOR PUBLIC LAND

# The millenium is over. The future is @ATI.

## The face of technology is changing.

Soon everyone will be an XPERT@WORK™! One look at ATI's performance and everyone's brand of choice for graphics boards will be ATI RAGE PRO™ technology. A Winbench 97 score of over 120 million Winmarks* is coming to a PC near you this summer. And, nothing will look the same again!

## Summer '97. ATI changes everything.

Now You're Gonna See It.™

ATI

*Winbench '97 Business Graphics test conducted at 1024x768 16bpp mode on a Pentium II 266 system with 64MB of RAM system memory, 512K pipeline cache under Windows 95 using Microsoft certifiable drivers (non-GDI patched)

Circle 5 on reader service card

Stifle the Startup folder ◆ Print a directory list ◆ Manage NT's Task Manager

# Stop Call Waiting for Your Voice Calls

MOST PEOPLE KNOW that when they're going online, they can disable Call Waiting on a standard analog line by adding a special code to the beginning of the phone number their modem dials. The most common codes for this are *70, 70#, and 1170. (To find out what code works in your area, consult your local phone directory.)

But Windows also lets you do this for outgoing voice calls to clients or contacts that require uninterrupted conversations.

In Windows 95, start Phone Dialer (select *Start•Programs•Accessories•Phone Dialer*). If you want to disable Call Waiting for all outgoing calls, choose *Tools•Dialing Properties*. You might think that all you have to do is check the box that begins 'This location has call waiting'. But this option affects only modem and fax calls.

To disable Call Waiting for Phone Dialer as well, first uncheck the option (so the code isn't dialed twice). Then in the box that begins 'To access an outside line' type the disabling code followed by a comma (see **FIGURE 1**). The comma causes the dialer to pause for a dial tone before continuing. Use the first box in this line for local calls; add the same code to the second box if you want to disable Call Waiting for all long-distance calls as well.

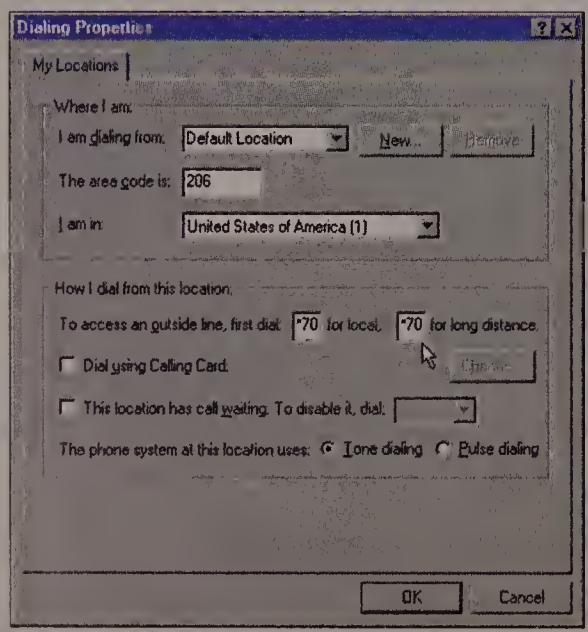



**FIGURE 1: TURN OFF CALL WAITING for phone calls and online sessions by entering a code and unchecking the disable option for Call Waiting.**

If you want to disable Call Waiting only for certain individuals in your speed dial list, ignore the Dialing Properties sheet mentioned earlier. Instead, start Phone Dialer and choose *Edit•Speed Dial*. Click the button for the Call Waiting status you want to change, and type your disabling code, followed by a comma, at the beginning of the phone number. When you're done, click *Save*.

In Windows 3.x, start Cardfile. To disable Call Waiting for all outgoing calls, choose *Card•Autodial*. Type the disabling code in the Prefix box, followed by at least one comma (see **FIGURE 2**). Check *Use Prefix* and click *OK*. This option will now be turned on for any Cardfile file you open. To disable Call Waiting for certain parties only, don't futz with the prefix option in the Autodial dialog box. Instead, type the disabling code, followed by a comma, at the beginning of the phone number of selected cards in your Cardfile file. Then choose *File•Save*.

One last tip comes from Mike Sharsky of High Point, North Carolina: If the comma at the end of the disabling code doesn't make your dialer pause long enough to get a dial tone, you can increase the length of the pause simply by adding more commas. This trick works for all versions of Windows.

## STOP STARTUP STUFF, ONE MORE TIME

IN THE FEBRUARY issue, I pointed out that you could suppress the launching of applications in your Startup folder by holding down **<Shift>** as your computer starts. Unfortunately, this has the effect of putting you in Safe mode, a very limited state with no network support, no sound, and primitive video resolution and color.

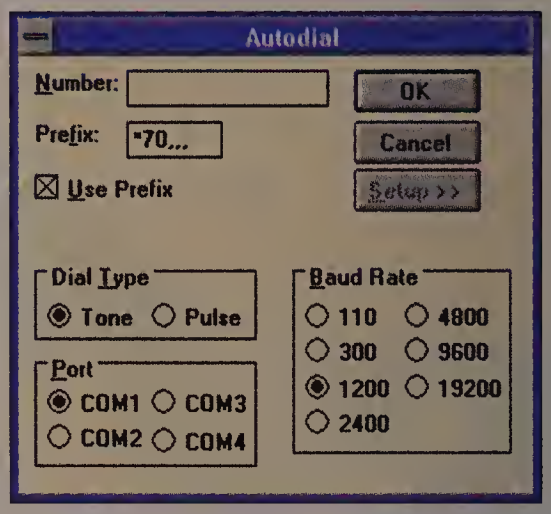



**FIGURE 2: DISABLE CALL WAITING from Windows 3.x's Cardfile. To make sure the dialer pauses long enough to get a dial tone, add commas to the disabling code.**

David Futcher of Kelso, Washington, wrote in with a better idea. If you simply hold down **<Ctrl>** when Windows starts, you can suppress the launching of your Startup folder applications without any of Safe mode's nasty side effects. You don't need to hold the key from the first sign of the Windows 95 Startup logo, either. Just press **<Ctrl>** as soon as you see the Windows 95 hourglass, then wait until Windows finishes starting. Your Startup applications will stay out of your way.

## GOING BACK TO YOUR ROOTS

LONG FILE NAMES are great: Carefully used, they make it about 255 times easier to figure out what's in all those files on your system. But make sure to keep them out of the root directory (folder) of each drive on your computer.

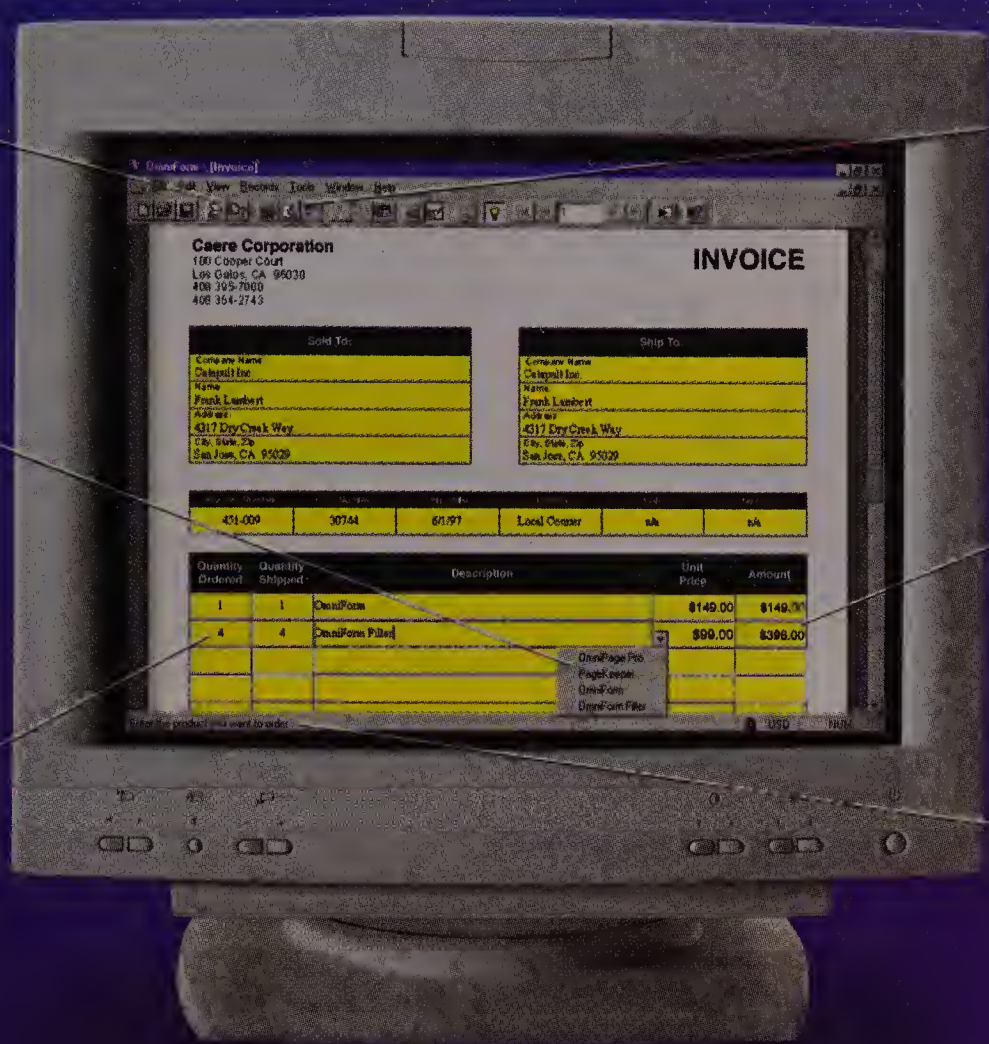
Most hard disks permit only 512 directory entries in the root directory. This may seem like plenty, but the number is misleading. That's because long file names occupy more than one directory entry—one for the short file name equivalent (eight characters plus a three-letter extension) plus any successive entries needed to store the long name. If you have a lot of folders in the root directory, each with a long file name, you can soon run into the 512 limit. (You don't have to worry about this limit, though, for objects you put in directories other than the root.) ▶

# SIX KEY REASONS TO MAKE YOUR PAPER FORMS ELECTRONIC.

**1 INSTANT FORMS:** *Scan in existing forms for easy conversion, pick pre-built form components from a scrapbook or create custom forms using powerful design tools.*

**2 EASY TO FILL OUT:** *Filling out electronic forms is easy. Just tab and type. Enter data quickly from a list of drop down choices.*

**3 DATABASE INTEGRATION:** *Automatically builds a database for each form. Search and sort records. Supports popular database formats like Access, dBASE, Paradox and others. Supports OLE 2.0.*



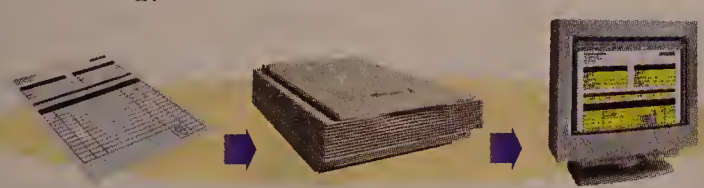

**4 SPELL CHECKING:** *Electronic forms give you perfect results by spell checking your forms automatically. Plus you can print, fax or e-mail your forms to others.*

**5 BUILT-IN CALCULATIONS:** *Electronic forms can create calculations automatically or just drag and drop using over 35 Excel-like calculations.*

**6 HELP:** *If you're not sure what to put in a particular field, don't worry. Each field can have a help message that will assist you in filling out the form.*

## OmniForm GIVES YOU EXACT ELECTRONIC DUPLICATES OF YOUR PAPER FORMS IN SECONDS.

Don't put up with paper forms any longer. Using Caere's proven, award-winning OmniPage® OCR technology, OmniForm® lets you scan and convert existing paper forms into electronic forms in seconds. The result? Total electronic duplicates you can see on your computer screen, edit, fill out and even spell check. To enter or change data, you just tab and type. It's that easy!




With OmniForm, you can print and fax your forms, or e-mail them throughout your company. And it gives you a simple, but powerful tool set to edit your forms, change fonts, add graphics or design completely new forms from scratch.

OmniForm also performs automatic calculations, validates entries and creates databases. So the information you get from your forms works a lot harder for you, not the other way around.

Want to add users? OmniForm Filler lets even more people use your electronic forms for a small additional cost.

Why deal with paper when you can save so much time and hassle using OmniForm? Call or visit a reseller for your copy today.

caere®

www.caere.com

Available for Windows 95, Windows 3.1, Windows NT and Macintosh

*Suggested price US dollars—subject to change without notice. Offer valid in US and Canada only. Caere, the Caere logo, OmniPage and OmniForm are registered trademarks of Caere Corporation. All other names are the property of their respective holders. © 1997.

Circle 91 on reader service card

You might think the solution would be to name all files and folders in your root directories with short file names. But even that approach may not work, because Windows 95's file names are case sensitive. For example, if you create a folder named SalesDoc (or even Salesdoc), you're still taking up two directory entries—one that stores the DOS equivalent, and one that stores the version with the uppercase and lowercase letters.

To be sure you're not taking up unnecessary directory entries, do this: In Windows Explorer, choose *View•Options*. Make sure the *View* tab is in front. Uncheck the box *Hide MS-DOS file extensions for file types that are registered* (if necessary) and click *OK*. This step ensures that you rename an entire file, not just the part before the extension. Then in your root directory, select a file or folder (but not the Program Files folder or any other folder that contains programs) and press **<F2>**. Type a short name for the folder in all uppercase letters, and press **<Enter>**. The folder name will reappear in lowercase except for the first letter and will occupy only a single directory entry.

To confirm that you've really eliminated extra directory entries, open a DOS window, type **cd**, and press **<Enter>** to get to the root directory. Then **type dir /p** and press **<Enter>** again. Examine all the file names on the left and right sides of the list (see **FIGURE 3**). If each name on the left has the same capitalization and length as its corresponding name on the right, you know it is using only one directory entry. Press **<Space>** to continue the directory listing; repeat this examination until you've looked over all the items in the root.

Finally, return to Windows Explorer, choose *View•Options*, and restore your preferred setting for hiding extensions.

Of course, there are other reasons to keep your root (or any folder) clean: It's a lot easier to find files if you sort them into a logical hierarchical structure rather than overloading one folder with hundreds of files.

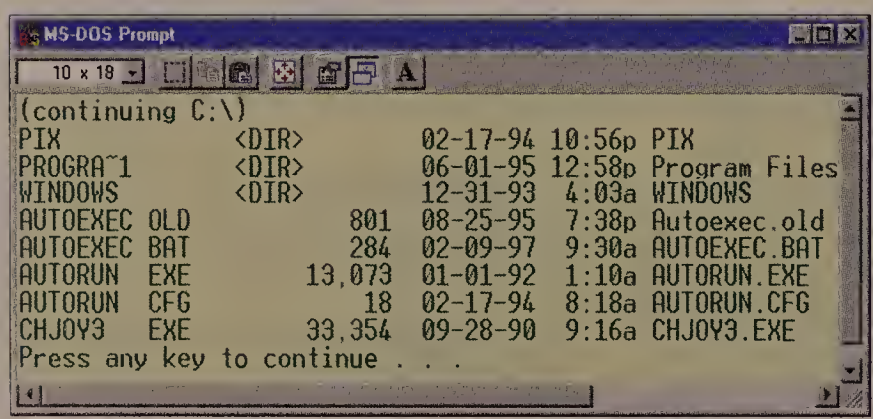



**FIGURE 3: REMOVE EXTRA DIRECTORY entries from long file names and from short file names with internal capitalization. Matching names on the left and right sides of the DOS listing indicate a single directory entry.**

## BOOT TO NOWHERE

EVERYONE knows it's a good idea to keep a bootable floppy disk (also called a boot disk or a system disk) handy in case your computer fails to boot from its hard disk. To make a floppy disk bootable, you simply format it with the System option.

To do this in File Manager, just choose *Disk•Format Disk*, check *Make System Disk*, insert a disk into the appropriate drive, and click *OK*. Or, if you already have a blank, formatted disk, insert it into your floppy drive, choose *Disk•Make System Disk*, and click *Yes* to confirm the transfer of system files.

Unfortunately, as M. L. Giggleman of Dallas points out, if you have compressed your hard disk with DoubleSpace or DriveSpace, you're in for a disappointment when you try to boot from this disk: Your computer won't be able to see the compressed files because File Manager's Make System Disk option doesn't transfer the files that it needs in order to see them. What used to be your C: drive may now appear only as a huge, unreadable dblspace.000 file (if you can see it at all, since it's a hidden file). You'll be able to access only the uncompressed files on your system, which is not very useful.

To solve this problem for an existing system disk you have lying around, use File Manager to navigate to your DOS directory, locate either dblspace.bin or drvspace.bin, and drag the file to the floppy icon on the drive bar to copy the file to your system disk. (Choose *Options•Drivebar* if you don't see the drive icons.) If you're making a whole new system disk, double-click *MS-DOS Prompt* in Program Manager. At the DOS prompt, type **format a: /s**, insert a new floppy disk, and press **<Enter>**. (The /s switch tells DOS you want a system disk.) Unlike File Manager, DOS will format the disk with the necessary DoubleSpace or DriveSpace file as well as the system files you need to boot from your floppy.

Now copy any backup files, disk repair, and antivirus software you think you'll need—for example, config.sys, autoexec.bat, system.ini, and win.ini, plus device drivers loaded in config.sys and autoexec.bat. Then put the disk in a safe place—and hope you never have to use it.

## PRINT DIRECTORY LISTS

I'M A FORMER Mac user who misses being able to print a list of folder contents with descriptions, file size, and so on. Can I print the contents of a directory (folder) in Windows?

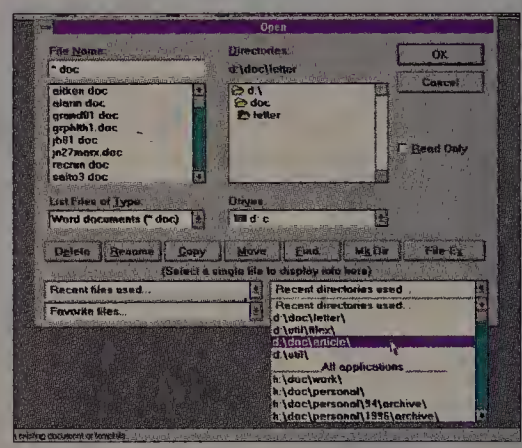
*John Tarquinto, Toledo*

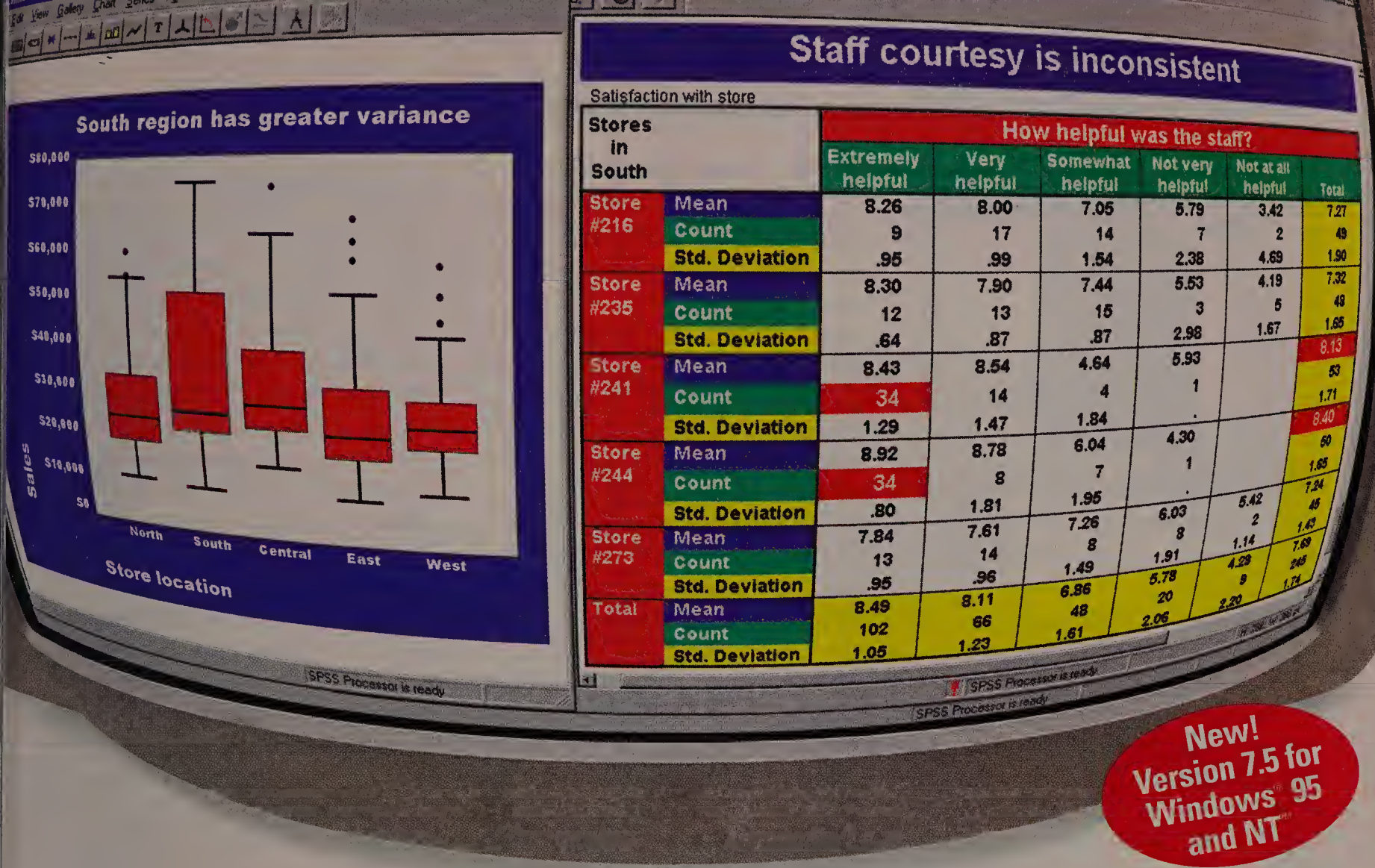
BELIEVE IT OR NOT, Microsoft has consistently omitted this useful feature from Windows. Luckily, it's easy to add a Print Directory command with a simple ▶

WINDOWS TOOLBOX

## Find It Fast

YOUR MOST-USED FILES and directories are just a click away in almost any file dialog box, once you've got FileEx 2.0 from Cottonwood Software. You also get plenty of other file management help. After using this killer utility a while, you'll wonder how you lived without it. Download the shareware version for Windows 3.*x* or Windows 95 from Cottonwood's home page (www.cottonwoodsw.com) or from PC World Online (www.pcworld.com/software_lib).






Staff courtesy is inconsistent

Satisfaction with store

| Stores in South | | How helpful was the staff? Extremely helpful | Very helpful | Somewhat helpful | Not very helpful | Not at all helpful | Total |
|---|---|---|---|---|---|---|---|
| Store #216 | Mean | 8.26 | 8.00 | 7.05 | 5.79 | 3.42 | 7.27 |
| | Count | 9 | 17 | 14 | 7 | 2 | 49 |
| | Std. Deviation | .95 | .99 | 1.54 | 2.38 | 4.69 | 1.90 |
| Store #235 | Mean | 8.30 | 7.90 | 7.44 | 5.53 | 4.19 | 7.32 |
| | Count | 12 | 13 | 15 | 3 | 5 | 48 |
| | Std. Deviation | .64 | .87 | .87 | 2.98 | 1.67 | 1.65 |
| Store #241 | Mean | 8.43 | 8.54 | 4.64 | 5.93 | | 8.13 |
| | Count | 34 | 14 | 4 | 1 | | 53 |
| | Std. Deviation | 1.29 | 1.47 | 1.84 | . | | 1.71 |
| Store #244 | Mean | 8.92 | 8.78 | 6.04 | 4.30 | | 8.40 |
| | Count | 34 | 8 | 7 | 1 | | 50 |
| | Std. Deviation | .80 | 1.81 | 1.95 | . | | 1.65 |
| Store #273 | Mean | 7.84 | 7.61 | 7.26 | 6.03 | 5.42 | 7.24 |
| | Count | 13 | 14 | 8 | 8 | 2 | 45 |
| | Std. Deviation | .95 | .96 | 1.49 | 1.91 | 1.14 | 1.43 |
| Total | Mean | 8.49 | 8.11 | 6.86 | 5.78 | 4.28 | 7.69 |
| | Count | 102 | 66 | 48 | 20 | 9 | 245 |
| | Std. Deviation | 1.05 | 1.23 | 1.61 | 2.06 | 2.20 | 1.74 |

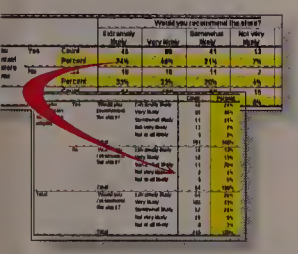
SPSS Processor is ready

New! Version 7.5 for Windows® 95 and NT™

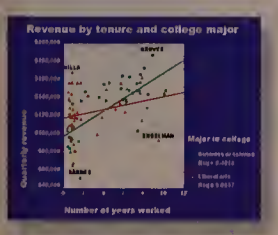
# Unleash the power in your data

## SPSS mines your data in ways no spreadsheet or reporting tool can

beyond spreadsheets with ana-
cal techniques such as crosstabs,
ression, factor and over 100 others.



e SPSS' multidimensional pivot
bles to discover critical information
t might be buried in traditional
ports.




et the best picture of your data
th over 60 high-resolution
siness, professional and quality
arts.

The critical information you need, like the variance and distribution of your data, isn't in simple summary reports. To compete and win, you need to take the next step – advanced analysis that leads to better decisions. Use powerful statistical methods and revealing charts to spot patterns and trends. Discover what's significant. Make better forecasts. You don't have to be a statistician to use SPSS. SPSS assists you with a tutorial, step-by-step instructions and "What's this?" help. We help you find a solution with a range of training and analytical consulting services. See our Web site for a white paper on how statistics help you achieve a competitive advantage.

**SPSS is used today to:**

- Analyze your database
- Accurately forecast sales
- Increase customer satisfaction
- Find the most profitable segments
- Improve mailing responses

**"Users will want this program for when their spreadsheets run out of steam."** – PC Magazine

**"...fast, powerful, robust, and a joy to use."** – Windows Sources

**"...easy enough for statistics newcomers, but includes features that power users require."** – PC World

**"...an essential tool"** – PC Week

WINDOWS MAGAZINE 1995 WIN 100 · PC MAGAZINE EDITORS' CHOICE · WINDOWS MAGAZINE 1994 RECOMMENDED · MacWorld 1994 WORLD CLASS AWARD FINALISTS · Advanced Systems BEST PRODUCT 1994 · BUYERS ASSURANCE SEAL

SPSS
Real Stats. Real Easy.℠

**For more information**
**Call 1 (800) 543-5837** A5837
or fax 1 (800) 841-0064
Visit our site on the World Wide Web: http://www.spss.com
or e-mail: sales@spss.com

We speak your language with 26 offices and 60 distributors worldwide.

**Circle 253 on reader service card**

**FIGURE 4: WITH A SIMPLE BATCH FILE, add this Print Directory command to the menu.**

two-line batch file, although be aware that this technique does not work with PostScript printers.

Because this batch file contains a special character, you need to create it at the DOS prompt instead of using Notepad. Open a DOS window and switch to the directory where you want to store your batch file (for example, you might type **cd c:\windows** and press **<Enter>**). At the DOS prompt for that directory, type **copy con pdir.bat** and press **<Enter>**. Next, type **dir > lpt1** (if necessary, replace this last item with the port to which your printer is connected).

If you want to customize the directory listing, add command-line switches after the word *dir* in this line (for example, add **/og** to make the directories appear at the top of the listing).

When the line looks right, press **<Enter>**. Now type **echo** followed by a space, and then press **<Ctrl>-L**. (This will look like ^L on screen, but it is not the same as typing a caret and a capital *L*.) Type another space, and then type **> lpt1** (again, your printer port may differ). Press **<Enter>**. This line will cause your printer to eject the page once your directory listing has finished printing. Finally, press **<Ctrl>-Z** and then press **<Enter>** to save these commands to the batch file. You can now close the DOS window.

To set up your batch file so that it runs easily in Windows 95, start Windows Explorer and choose *View•Options*. Click the *File Types* tab and select *File Folder* (not Folder) from the list of Registered file types. Click the *Edit* button. In the Edit File Type dialog box, click *New* to create a new action. In the 'Action' box, type something like **Print directory**. In the 'Application used to perform action' box, type **c:\windows\pdir.bat** (adjust the path as needed). Then click *OK* and close each of the remaining dialog boxes.

Now right-click a folder in Explorer's left pane, and choose *Print directory* from the resulting menu (see **FIGURE 4**) to test your new command. (If you right-click a folder in the right pane, the printed list will show only the contents of the folder containing the folder you clicked.) When the batch file is finished, you'll see a DOS window open on your screen; if instead you see a DOS prompt displayed full-screen, press **<Alt>-<Enter>** to make it a window.

To keep this window out of the way in the future, click its control menu icon (at the far left end of the title bar) and choose *Properties* from the menu. From the *Run* drop-down list in the resulting dialog box, select *Minimized*. Then check *Close on exit* and click *OK*. Close the DOS window. From now on, you won't have to fuss with the DOS window whenever you run your new Print directory command.

To use the batch file in Windows 3.1, you have to do a little typing each time. Start the Windows File Manager and select a folder in the left pane. (As in Windows 95, if you select a folder in the right pane, the list will show the directory containing the selected folder.) Choose *File•Run*. Press **<Home>** to move the cursor to the beginning of the Command Line. Type **pdir** (or whatever you named your batch file), followed by a space, leaving the directory name at the end of the command line. Then press **<Enter>**. (If that seems like too much typing, you can easily automate most of these steps with a Windows Recorder macro.) The DOS window will flash on your screen, but it should close automatically as soon as the batch file has finished running.

online *Find files from this article at www.pcworld.com/software_lib. Windows Tips welcomes your tips and questions and pays $50 for published items. Contributing Editor Scott Dunn is a principal author of* The PC Bible, 2nd Edition *(Peachpit Press, 1995, 800/283-9444). See page 14 for contact information.* ■

## Take Windows NT to Task

WHAT NT UTILITY lets you launch, close, and switch between apps; tile, cascade, and minimize all open windows; and get more data about system activity and performance than you'd ever want? It's the Task Manager built right into Windows NT.

To open the Task Manager, right-click on the Taskbar and choose *Task Manager* from the menu. Here are some highlights:

**Start, stop, switch.** Click the *Applications* tab to switch to a running application, terminate one, or open a command line.

**Window dressing.** Click the *Windows* menu to arrange the windows of running programs or get them out of your way by minimizing them.

**Low profile.** To keep Task Manager out of the way, uncheck *Always On Top* on the *Options* menu. Or check *Minimize On Use* and *Hide When Minimized* to keep Task Manager off the screen when you press **<Alt>-<Tab>** to switch between applications. You can get it back by double-clicking its icon in the notification area.

**Follow the process.** Click the *Processes* tab to get information on current operations. To select the data to be shown, choose *View•Select Columns* and check the items you're interested in. If you select more columns than fit in the default window, you can resize Task Manager by dragging any edge.

**Command performance.** For a graphical summary of current system activity and performance (as in the figure below), click the *Performance* tab. To see how much the operating system is using your CPU, choose *View•Show Kernel Times* to add a separate indicator (marked in red).

**HOW'S MY DRIVING? Windows NT's Task Manager makes it easy to monitor current system performance.**

# Breakthrough

## In Keyboard Monitor Switches

Multi Platform & On-Screen Display

**SEE US AT COMDEX CANADA**
**July 9-11 • Toronto, Ont**
**Booth #146**

**BREAKTHROUGH** the clutter of multiple keyboards, monitors, and mice with this latest **INNOVATION** from Rose. This switch has every feature you asked for:

Switches several servers or computers to a single monitor, keyboard, and mouse

Supports any mix of PC, Apple, Sun, RS 6000, HP 700 series, DEC Alpha, SGI, or other computers from any keyboard or mouse

Front panel has keypad for easy selection of computers and configuration

Front panel display shows computers name and other information

Command to switch can come from your keyboard, front panel, or RS232 port

Simple to use keystrokes switch computers for fast and easy control

Built in daisy-chaining to support up to 256 computers

Flash memory for future upgrade of features

Easy to use **OverView™** system gives control and status with on-screen graphics

Many other features!

**ROSE ELECTRONICS INVENTED** the first keyboard-monitor switch. We have an extensive line of keyboard and video control products for any application.

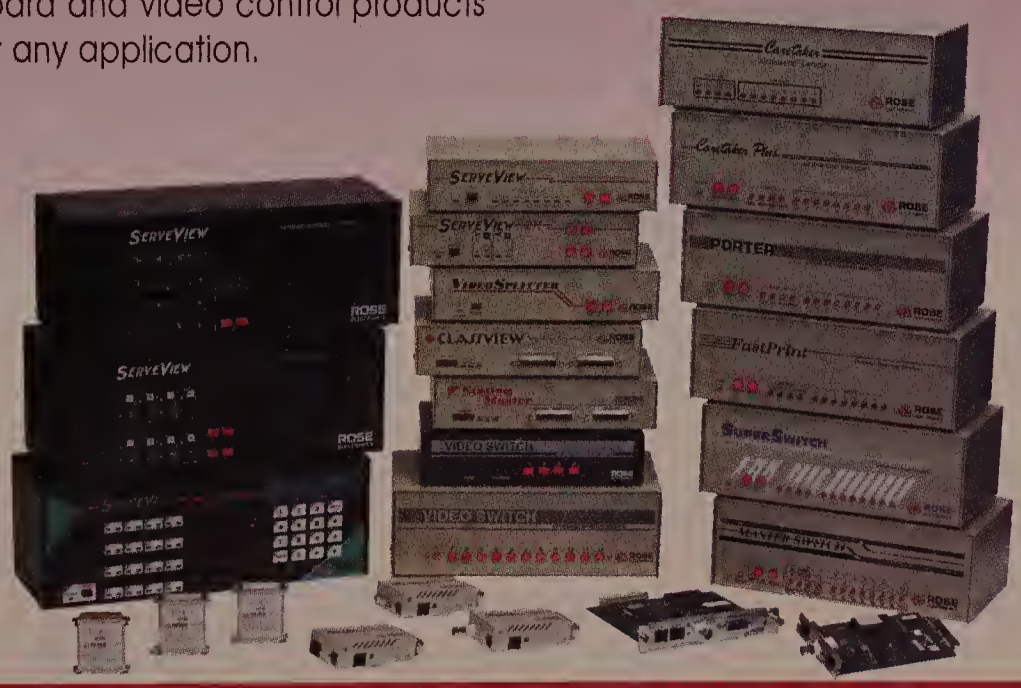
**CALL TODAY FOR FREE CATALOG:**

- *Keyboard/Video Control*
- *Print Servers*
- *Data Switches*

**800-333-9343**

**VISIT OUR WEB SITE AT WWW.ROSEL.COM**

**ROSE ELECTRONICS**




10707 Stancliff Road Houston, Texas 77099 Tel 281-933-7673 Fax 281-933-0044

Circle 194 on reader service card

# Excel 97 Hyperlinks Tame Large Worksheets

NAVIGATING WITHIN a complex spreadsheet has always been difficult despite features like the Edit•GoTo command, range names, sheet tabs, and macros. But Excel 97's versatile new hyperlink feature, ordinarily used to link to Web-based HTML or spreadsheet documents, may change that.

Suppose you have a workbook named projectlink.xls. Its top sheet, named Summary, contains a list of expense totals. You'd like to click the value for Project X and see the expense details (see **FIGURE 1**).

| | A | B |
|---|---|---|
| 1 | **Expense Category** | **Amount** |
| 2 | General R&D | $2,589,500 |
| 3 | Project X (click for detail) | $204,777 |
| 4 | Other | $500 |
| 5 | **Total** | $2,794,777 |

| | A | B | C | D |
|---|---|---|---|---|
| 1 | **Item** | **Amount** | | |
| 2 | Wrench | $123,456 | | |
| 3 | Flange | $78,901 | | |
| 4 | Pipe | $2,345 | | |
| 5 | Glue | $67 | | |
| 6 | Screw | $8 | | |
| 7 | **Total** | $204,777 | Return to Summary | |

**FIGURE 1: EXCEL 97'S HYPERLINKS make it easier to navigate a complex worksheet.**

Here's how to set it up: On the sheet where you listed the Project X data, calculate the total with a regular =sum() formula. Then select *Insert•Name•Define* and name the Total cell **ProjectXDetail**. In cell B3 of the summary sheet, enter the following formula: **=hyperlink("[projectlink.xls]ProjectXDetail",ProjectXDetail)**.

When the user clicks B3, Excel jumps to the cell named ProjectXDetail. To let the user return easily to the summary sheet, enter **=hyperlink("[projectlink.xls]Summary!A1","Return to Summary")** in a nearby cell, as in the bottom screen in Figure 1.

The formulas assume that you're moving to another range in the same worksheet, but they work just as easily across separate worksheets. Simply substitute another file name (and path, if necessary) for ***projectlink.xls*** in the formulas.

Finally, there's a trick to editing a hyperlink formula. You can't click it without being launched to another cell. So, to select and edit a hyperlink cell, you need to right-click it, then press **<Esc>** to cancel the pop-up menu.

```
Sub FillDays()
  Dim PeopleDates, CalendarDays As Range
  'Identify the calendar cells to fill, and the database
  Set CalendarDays = Worksheets("Calendar").Range("CalendarDays")
  Set PeopleData = Worksheets("ListLookup").Range("A2:b25")

  'Do the following for each cell in the calendar
  For Each c1 In CalendarDays.Cells
    'Do the following for each date in the list
    For Each c2 In PeopleData.Resize(PeopleData.Rows.Count, 1)
     'If the current date in the list matches the current calendar day
     If c1.Offset(-1, 0).Value = c2.Value Then
       '...enter the corresponding list item into the calendar
       c1.Formula = c1.Formula & c2.Offset(0, 1).Formula & Chr(10)
     End If
    Next c2
  Next c1
End Sub
```

**FIGURE 2: TRANSFER DATA from an Excel database to a calendar with this macro.**

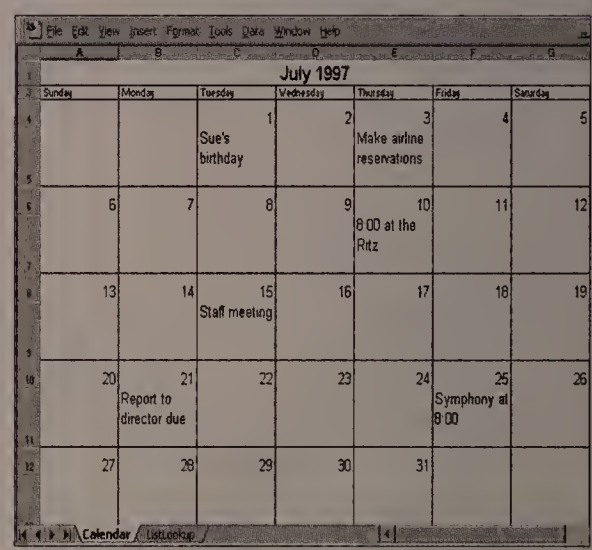
## DISPLAYING EXCEL LIST DATA IN A CALENDAR

IN THE JUNE column, I showed how to set up a blank calendar in Excel. This month we'll transfer dated items from an Excel database into that calendar.

Begin by creating the calendar as described in "Put Your Calendar in an Excel Spreadsheet" (*Spreadsheets*, June). After you've named the calendar sheet, select *A5:G5*, then press and hold the **<Ctrl>** key as you select *A7:G7*, *A9:G9*, *A11:G11*, *A13:G13*, and *A15:G15*. Choose *Insert•Name•Define*, enter **CalendarDays** in the Name box, and click *OK*. Next, on a separate sheet, create a database like the one shown below. Name that sheet **ListLookup**.

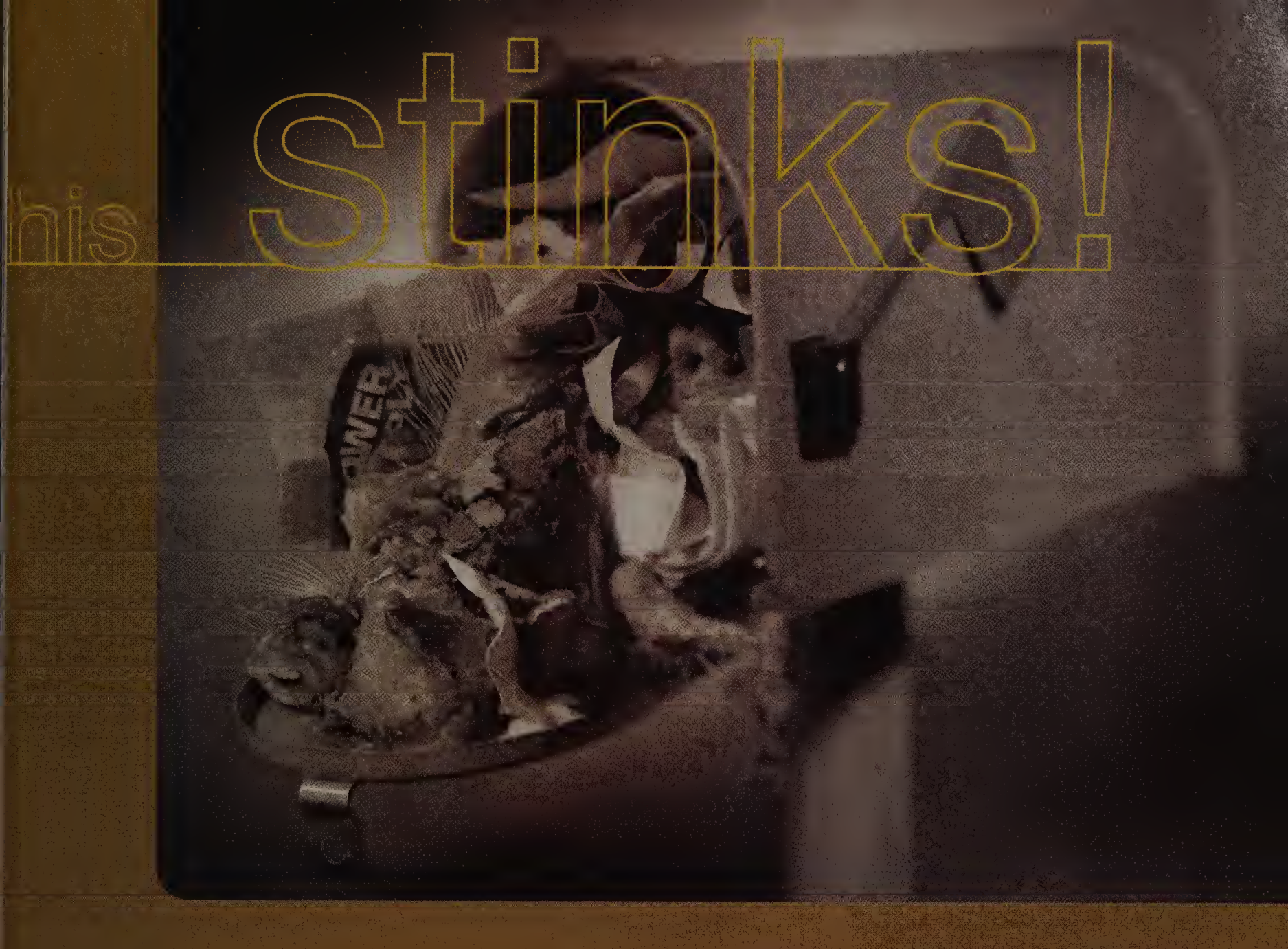
| | A | B |
|---|---|---|
| 1 | **Date** | **Note** |
| 2 | 7/1/97 | Sue's birthday |
| 3 | 7/3/97 | Make airline reservations |
| 4 | 7/10/97 | 8:00 at the Ritz |
| 5 | 7/15/97 | Staff meeting |
| 6 | 7/21/97 | Report to director due |
| 7 | 7/25/97 | Symphony at 8:00 |

Now, create the macro that will fill in the calendar with the database entries. In Excel 97, select *Tools•Macro•Visual Basic Editor*, select *Insert Module*, and enter the FillDays macro shown in **FIGURE 2**.




Return to the calendar sheet and run the FillDays macro. It stops in each calendar cell, scans the dates in the database for a match, and if it finds one, writes the corresponding notation into the calendar, as in the figure above.

*Spreadsheets welcomes your tips and questions and pays $50 for published items. Contributing Editor Richard Scoville is a software training consultant in Chapel Hill, North Carolina. See page 14 for contact information.* ■




## So why is this OK when it's e-mail?

If the Post Office treated your mail like garbage, you'd be outraged. So why put up with it from your e-mail program? Now there's a way to make sure you're never ever left staring at garbage text instead of an e-mail attachment. It's a hot new clean up program called **e-ttachment Opener™**. From DataViz, the file compatibility specialists.

This nifty utility solves all your problems receiving and reading e-mail file attachments. **e-ttachment Opener** will find the file within the garbage text and turn it back into exactly what you were supposed to receive. Whether that file was sent to you in BinHex, uuEncode or MIME formats. **e-ttachment Opener** also lets you view and print virtually any graphics, word processing, spreadsheet or database file. Even without the application that created it. Or extract almost any compressed file created in Zip, Gzip, z or tar.

If you need even more help handling foreign file formats, DataViz delivers again. Even after **e-ttachment Opener** has turned garbage back into a readable file, you may not have an application that can open it. Our *Conversions Plus®* program converts hundreds of different file formats between PC applications or Macintosh and PC applications. Quickly and accurately. It contains all the features of **e-ttachment Opener** plus over 1,000 file translation combinations. It also contains our *MacOpener®* utility, which is the perfect solution for reading and writing Macintosh disks on your PC.

For more information about our products, call DataViz at **1-800-270-0030 Ext.102** or visit us on the web at http://www.dataviz.com/eto6.

*It's the quickest way to cut down on your junk mail.* Runs on Windows 95 and Windows NT

DATAVIZ

Available at these locations: COMPUSA THE COMPUTER SUPERSTORE EGGHEAD SOFTWARE

product names are trademarks of their respective holders.

**Circle 81 on reader service card**

Override weird Word styles ◆ Add WordPerfect text art ◆ Fix Word Pro bug

# Setting Default Formats in Word 6.0 and Word 97

NEW WORD USERS, particularly those who are switching from other programs like WordPerfect, often find it difficult to change basic formatting defaults in the program, such as justification and default font and size. But it's quite easy to alter Word's formatting defaults to get exactly the results you want.

When you start Word, it automatically loads its default normal.dot template, the foundation for every new document. Within the normal.dot template is a set of formatting styles. Change those, and you've changed the defaults for all new documents. Here's how to handle the job (see also **STEP BY STEP**):

1. Launch Word, select *File•New,* and then double-click the *Blank Document* icon (in Word 6.0, *Normal*) in the New dialog box. This selection loads normal.dot.
2. To change page settings such as margins, select *File•Page Setup*. In the Page Setup dialog box, set your margins, then click the other tabs to specify the paper size, paper source, and layout. (Check the results of your changes in each tab's Preview window.) Leave the 'Apply to' field set at 'Whole document', then click the *Default* button. In the confirmation box that appears, click *Yes* to make your changes permanent.
3. Once the basic page settings are set, select *Format•Style* to display the Style dialog box. Click *Normal* in the Styles list, then click the *Modify* button.
4. In the Modify Style dialog box, check the *Add to template* box to make sure your changes become the new defaults. If you forget this step, any changes you make will apply only to the current document. Now click the *Format* button, and from the drop-down list pick the items you want to change, such as *Font, Paragraph,* and so forth, and make your changes in the resulting dialog boxes. (Check your results in the Preview windows.) When you're satisfied with your changes, click *OK,* then click *Close.* Word will automatically save your changes in the normal.dot file when you exit the program.

When you change the Normal style as described above, all documents that you create thereafter will take on the new style. Documents that you had already created will remain unchanged.

## SELECT LARGE BLOCKS OF TEXT AT NORMAL SPEED

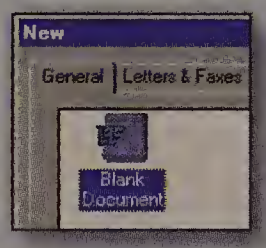
WHEN YOU'RE SELECTING a large block of text in Word, relying on the mouse for precision is nearly impossible: When the cursor reaches the bottom of the screen, the text scrolls by at turbo speed. Then when you backtrack to try to unselect some of the document, the text flies by in the opposite direction. ▶

STEP BY STEP

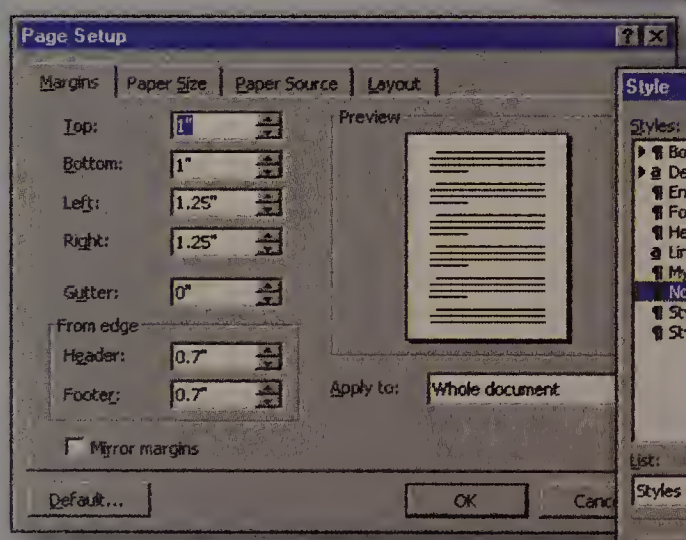
## Modify Your Word Document Defaults by Editing the Styles in the Normal.dot Template

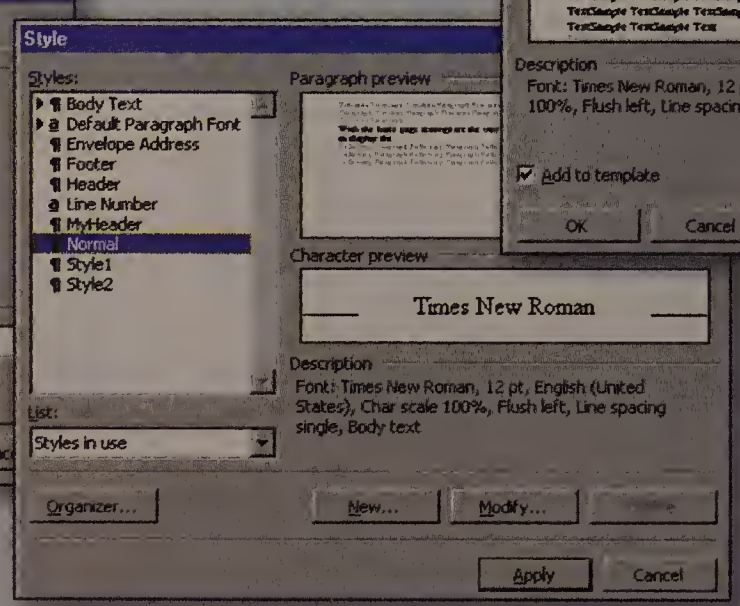
❶ Open a new blank document to load the normal.dot template. ▶

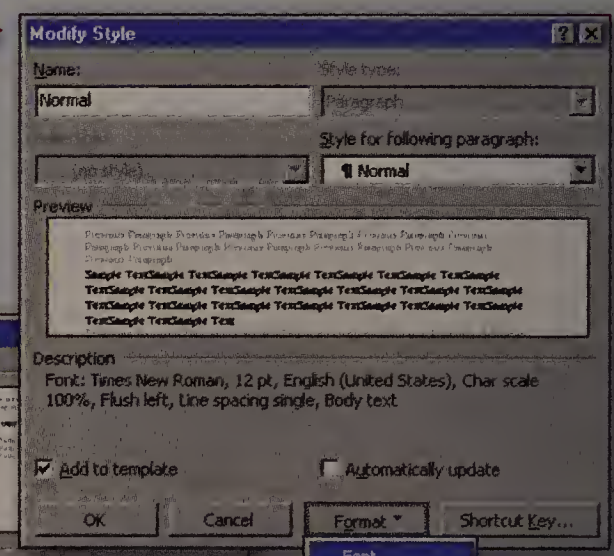
❷ Select *File•Page Setup* to change page settings, make sure the 'Apply to' box says 'Whole document', click the *Default* button, and then click *Yes* to confirm. ▼




❹ Check the *Add to template* box, and click the *Format* button to select each page element you want to change. Click *OK* when you're done, then click *Close.* ▶




❸ Select *Format•Style,* select the *Normal* style, ▶ then click *Modify.*

# what's your ANGLE?

No matter how you look at the new PanaFlat™ PF70 Monitor from Panasonic, it's perfectly flat. From the center to the very edges of the screen, in every corner, any angle... just plain flat. And that means you get exceptional clarity, near-zero reflectivity, and precision representation of every item on the screen.

Most CRTs are curved. This center "bulge" causes image distortion at the edges of the screen, and a light reflection across the entire screen.

The PanaFlat PF70 is uniquely designed to be flat both horizontally and vertically. Every item on the screen –at the edges and in the corners– is crystal clear. Its flat screen, 0.24 stripe pitch and 1600 x 1280 resolution make it truly a revolutionary monitor. Here's how we compare to the competition:

| Model | Dot Pitch (mm) | Max. Res. (H x V) | Max. H. Freq. | ARP* |
|---|---|---|---|---|
| PF70 | 0.24 | 1600x1280 | 86 kHz | $849 |
| NEC P750 | 0.25 | 1600x1200 | 94 kHz | $904 |
| Nokia 447XAV | 0.25 | 1600x1200 | 92 kHz | $968 |
| EIZO FXC6 | 0.26 | 1600x1200 | 86 kHz | $960 |
| SONY 17seII | 0.25 | 1600x1200 | 85 kHz | $872 |

The PanaFlat PF70 is covered by the most extensive warranty and customer support program in the industry– a 3-Year Limited Warranty on parts, labor and the CRT, 1-Year 48-Hour On-Site Exchange Program, and 24-Hour, 7-Day Customer Support Hotline.

Check out a PanaFlat PF70 today and see how we've taken a new angle with monitor technology. PanaFlat... Enjoy the view!

**Panasonic**
Computer Peripheral Company
We Make Your PC Come Alive.

1-800-742-8086 ext. MN16
www.panasonic.com/alive

* Average Retail Price as of 4/1/97

**Circle 166 on reader service card**

MN15-PW

To select text at a more reasonable scrolling rate, you can use the little-known Extend Selection mode. Click at the beginning of the text you want to select, then press **<F8>**. (On the status line, you'll see that the EXT box is turned on.) Now scroll through your document by pressing **<Right>** to select one character at a time, **<Space>** to select one word at a time, or **<Down>** to select one line at a time. Click again at the end of the highlighted text to select it. If you need to, you can continue to click through the text to extend your selection, or you can click at an earlier point to make the selection smaller. When you're finished, press **<Esc>** to turn off Extend Selection mode. You can also turn this mode on and off by double-clicking *EXT* in the status bar.

## Word Pro Keyboard Navigation Shortcuts

| To do this | Press this |
|---|---|
| Display the Formatting Info box and switch between it and the document. | <Alt>-<Enter> |
| Move the cursor to the beginning of the next sentence. | <Ctrl>-period key |
| Move the cursor to the beginning of the previous sentence. | <Ctrl>-comma key |
| Move the cursor to the beginning of a document with more than one division. | <Ctrl>-<Home>-<Home> |
| Move the cursor to the end of a document with more than one division. | <Ctrl>-<End>-<End> |
| Cycle through all open documents. | <Ctrl>-<Tab> |

**MOVING AROUND IN WORD PRO 96 OR 97 documents is a lot easier if you know a few keyboard shortcuts. While Word Pro uses all the normal Windows keyboard shortcuts, such as <Ctrl>-<Home> and <Ctrl>-<End>, it also has a few tricks of its own, and they're well worth memorizing.**

### KEEP WORD FILES YOUR STYLE

IT HAPPENS ALL THE TIME: You receive a Word file from someone and open it in your copy of Word, only to find that it's formatted in a weird-looking font called CartoonText, with strange indentations to boot. The creator of the document has modified the default settings in their normal.dot file, saving personal preferences with the document. When you open the file, Word selects formatting as close to the sender's intentions as possible.

To force Word to use your styles rather than the sender's, just select *File•Close* to get the strange-looking document off your screen. Select *File•New,* and double-click the *Blank Document* icon (in Word 6.0, *Normal*) to open a new, empty document. Then select *Insert•File* and select the document you want to view. Word will adapt the document to your normal.dot style settings. Select *File•Save As* and save the document with a new file name.

**FIGURE 1: WORDPERFECT'S TEXTART FEATURE adds special effects to your documents.**

### ENHANCE DOCUMENTS WITH WORDPERFECT 7'S TEXTART

IF YOU'RE LOOKING for an easy way to punch up a humdrum document, don't forget about WordPerfect 7's TextArt feature. It can add impact to any document by turning text into a powerful graphical image. Here's how to use this tool:

1. Select some text, then select *Graphics•TextArt* from the menu.
2. In the TextArt 7 dialog box, click *More* and select a shape (see **FIGURE 1**). You'll see the result immediately in your document, so experiment until you get a shape you like. You can also select the font, style, color, and alignment from this dialog box. At any time, you can change the text itself by editing it in the 'Type here' box.
3. Once you've chosen your settings on the General page, click the *Options* tab to see more choices (see **FIGURE 2**). You can select fill patterns, shadows, and outlines for your text graphic and alter the amount of smoothing WordPerfect applies to the graphic. To change the orientation of the text, click the *Rotation* button and drag the handles that appear around the text box. When you're satisfied with your design, click *Close* to return to your document.
4. To change the dimensions of your text graphic, just drag its handles. To move the text graphic, click inside the box and drag it to a new position on the page. To change its appearance, double-click it to display the TextArt 7 dialog box.

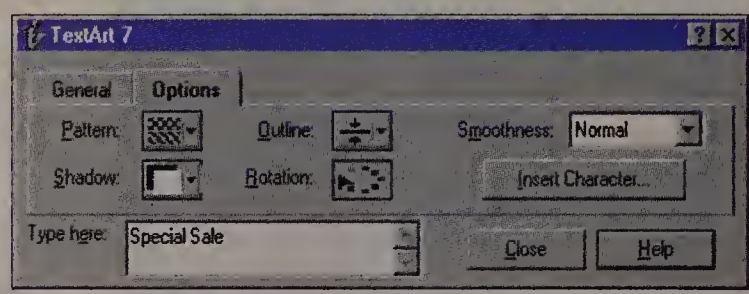



**FIGURE 2: TEXTART'S OPTIONS TAB lets you add still more special effects to WordPerfect text.**

TextArt is available in WordPerfect 6.1 as well. It works almost the same way, except that in version 6.1 you have to format the text graphic from a toolbar rather than a dialog box. In addition, you can't add TextArt effects to existing text. Instead, you select *Graphics•TextArt* and then type the text you want to enhance in the toolbar.

### WORD PRO 96 GLOSSARY BUG

THERE'S A BUG in Word Pro 96's glossary feature that won't let you insert a glossary entry at the beginning of a blank line. When you type the entry's shortcut, then press <Ctrl>-K, Word Pro displays the Glossary dialog box instead of the text. Fortunately, there's an easy work-around.

Type the shortcut, then type a space, and Word Pro will insert the expanded text. Lotus has fixed this bug in Word Pro 97.

Word Processing *welcomes your questions and tips and pays $50 for published items. Contributing Editor George Campbell is a contributor to* The PC Bible *(Peachpit Press, 1995, 800/283-9444).* *See page 14 for contact information.* ■

This Little Baby Goes Into The GUTS Of This Bad Boy

Brace Yourself For This Stuff

The Intel Pentium® II processor gets airborne thanks to a combination of the brute power of Intel's Pentium® Pro processor and the multimedia wonders of MMX™ technology.

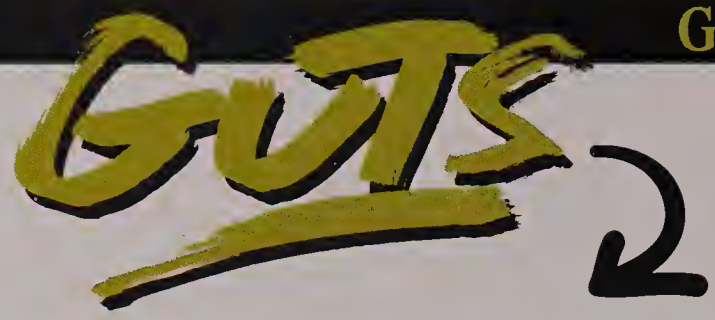
The Gateway G6-266XL system's foundation is a performance triple play: 266MHz, 512K cache and 64MB of EDO DRAM.

This hyper-tweaked bad boy toys with your existing software and strains at the leash to get to the next generation of applications. It's a raging collection of microscopic access times, blazing throughputs, razor-sharp resolutions and cavernous storage. Call Gateway today and tweak one up for yourself. Then get ready to leave a G6 scorch mark on the computing world.

And You Get It From These Guys

MMX™ intel inside pentium® II PROCESSOR

# G6-266XL




- **Intel® 266MHz Pentium® II Processor with 512K Cache**
  Processor and cache on Single Edge Contact Cartridge, Intel designed ATX form factor motherboard, one shared ISA-PCI, 3 PCI and 2 ISA slots, National 307 SUPER I/O, Intel 82440FX chipset
- **64MB EDO DRAM**
  Two 32MB modules, two open sockets, expandable to 256MB
- **9GB Ultra Wide SCSI-3 Hard Drive**
  10 platters, 20 heads, 7200 rpm, programmable multi-segmentable cache buffer, 8.2ms access time
- **STB® ViRGE™ GX 4MB, 3-D 64-Bit PCI Graphics**
  1600 x 1200 resolution at 65,000 colors, full-frame/ full-screen resolution multimedia
- **12X min/24X max CD-ROM Drive**
  Minimum of 1800KB/second transfer on inner diameter, Maximum of 3600KB/second transfer on outer diameter
- **3.5" Floppy Diskette Drive**
- **Ensoniq® Wavetable Audio**
  Wavetable sound with up to 32 simultaneous voice polyphony, 90dB typical signal to noise ratio, Microsoft® Direct Audio compatible
- **Boston Acoustics® High-Fidelity 3-Piece Speaker System**
  Two Low-Profile 5-Watt Satellites, One 15-Watt-Powered Subwoofer with frequency response 50-20,000 Hz, +/- 6dB.
- **TelePath® Modem** *for Windows* with **x2™ Technology***
  Data mode support for x2; V.34 Annex 12; ITU-T V.34. V.32bis, V.32, V.22bis, V.22, V.23, and V.21. Fax mode support for V.17, V.29, V.27ter, and V.21 modulation schemes
- **Vivitron®1100 Monitor**
  19.7" viewable, .28mm screen pitch, 95kHz, supports non-interlaced resolutions of up to 1600 x 1200 at 75 Hz, TCO 92
- **Full-Sized, 11-Bay Tower Case**
  200-Watt Power Supply
- **104+ Keyboard**
- **Microsoft® IntelliMouse™**
  Rolling ball between buttons allows scroll, pan and zoom
- **TR4 4GB SCSI Tape Backup Unit**
  Up to 8GB compressed, maximum data transfer rate of 30MB per minute, 5MB per second burst with 512K on-drive data buffer, one tape included
- **MS® Windows® 95 & MS Office 97, Small Business Edition Plus Encarta® 97**
- **MMX™ Technology-Enhanced Software Bundle**
  Features titles optimized to run on systems with MMX Technology
- **Gateway Gold™ Premium Service and Support for Desktop PCs**

**$4999**

**Maximum data transfer rate dependent on certain variables including particular modems with which you are communicating, telephone lines, communications software and communications protocols.*

MMX™ intel inside pentium® II PROCESSOR

GATEWAY2000
*"You've got a friend in the business."®*

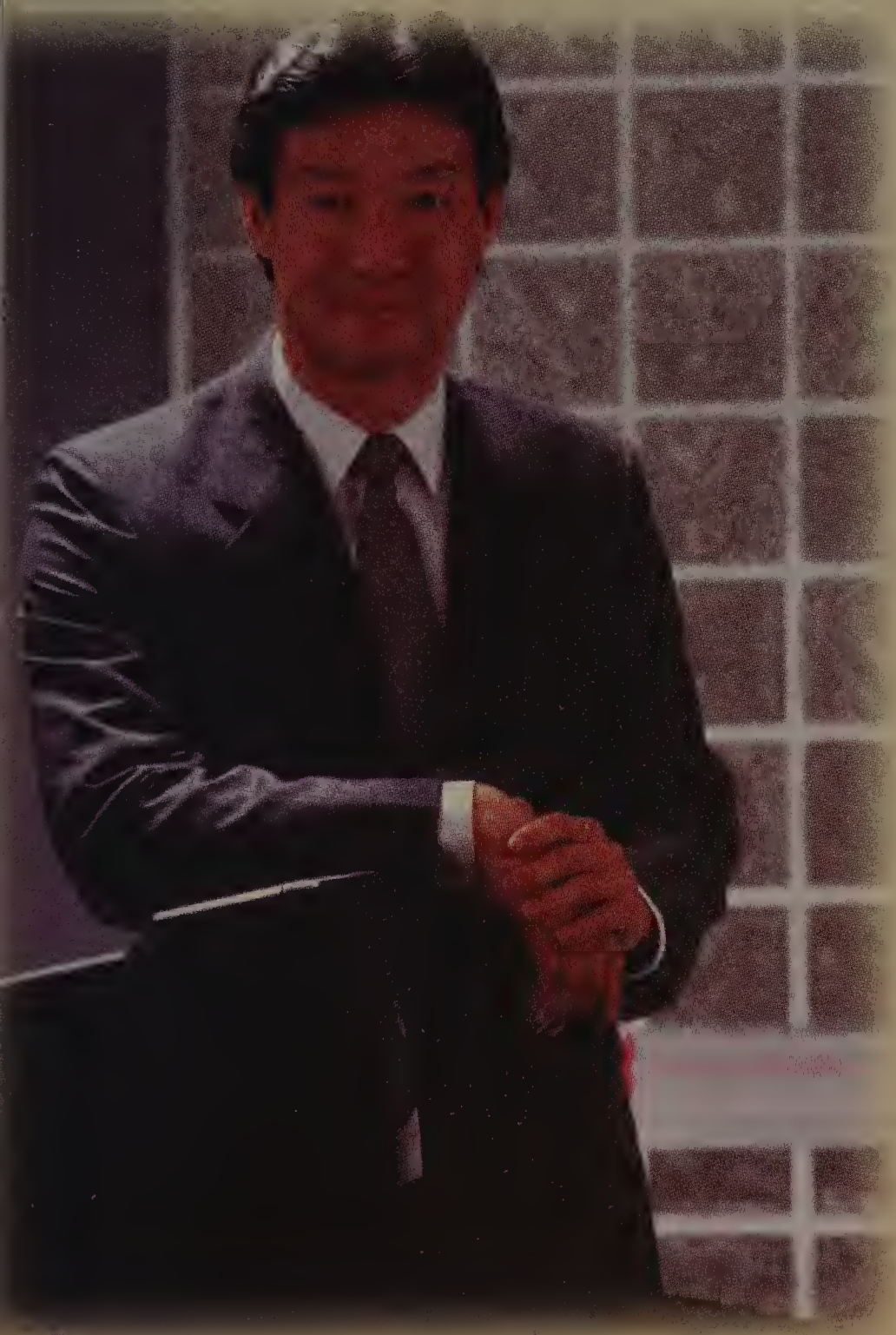
**888-888-0343**

www.gateway.com

©1997 Gateway 2000, Inc. GATEWAY 2000, black-and-white spot design, "G" logo, TelePath, Vivitron and "You've got a friend in the business" slogan are registered trademarks, and Gateway Gold is a trademark of Gateway 2000, Inc. The Intel Inside Logo, Intel and Pentium are registered trademarks and MMX is a trademark of Intel Corporation. ViRGE is a trademark of S3. All other brands and product names are trademarks or registered trademarks of their respective companies. Many Gateway 2000 products are custom engineered to Gateway 2000 specifications, which may vary from the retail versions of the software and/or hardware in functionality, performance or compatibility. All prices and configurations are subject to change without notice or obligation. Prices do not include shipping or applicable sales tax.

# At 9:37am, he'll check PC World Online for expert advice on buying workgroup printers for his new division.

# By noon, he'll fax the P.O.



## Where did you get *your* information?

**PC WORLD online**

the leading online resource for PC buyers and users

**www.pcworld.com**

Circle 172 on reader service card

# Access 97 Hyperlinks Make Quick Connections

ACCESS 97 OFFERS many new features, but the ones with the most sparkle are all Internet related: the Web toolbar, the Publish to the Web Wizard, a Hyperlink tool for the form and report designers, and the new Hyperlink field type for tables. If you don't go on the Web, you may think you have no use for them.

Not so!

You can add hyperlinks to Access 97 forms, reports, and tables to create your own information highway. Hyperlinks are easier to create than macros and provide faster connections.

As you may know, a *hyperlink* is a piece of text on a Web page that you click to jump to another location on the Net. Behind the scenes, a hyperlink is associated with a URL (uniform resource locator) that points to another Web address.

In Access 97, you can create hyperlinks to navigate between tables, forms, and reports in a database or to jump to another Microsoft Office object. The form shown in **FIGURE 1** has two hyperlinks: one that opens another form in the open database (maybe one in which you specify more detail) and another that jumps to a Word document (perhaps a report to the boss adding narrative detail).

**FIGURE 1: CLICKING ON THIS FORM'S HYPERLINKS opens another Access form or a Word document.**

There are two ways to include hyperlinks in Access. One is to click the *Insert Hyperlink* tool on the Form Design toolbar (in forms only); the other is to add a hyperlink field to a table or a form. (You can also put a hyperlink on a report, but it will work only if you export the report to Word, Excel, or an HTML file.)

But which technique should you use? Simple: If you always want to jump to the same place, no matter what record you happen to be viewing, the Hyperlink tool is the way to go. If you need to store a different "jump" address in each record of a table, use a hyperlink field.

Figure 1 shows an example of each case: The hyperlink that opens the Expense Categories form was added to the design of the Expense Reports form with the Hyperlink tool. The address to the Word document June Sales Trip sits in a hyperlink field in the Expense Reports table. I'll show you how to create both types.

## ADD A HYPERLINK TO A FORM

1. OPEN A FORM in design mode; click the *Insert Hyperlink* tool on the Form Design toolbar.
2. In the Insert Hyperlink dialog box, click the *Browse* button next to 'Named location in file (optional)', click the *Forms* tab in the Select Location dialog box, and double-click the name of the form you want to link to (see **FIGURE 2**). Click *OK* to close the Insert Hyperlink dialog box.
3. Select the hyperlink; drag it from the upper left corner of the design window to where you want it to appear.
4. Edit the label, if you like. I changed the default term *Form Expense Categories* to the shorter *Expense Categories*.
5. Right-click the label and select from the menu to change the font color or other properties, if need be.

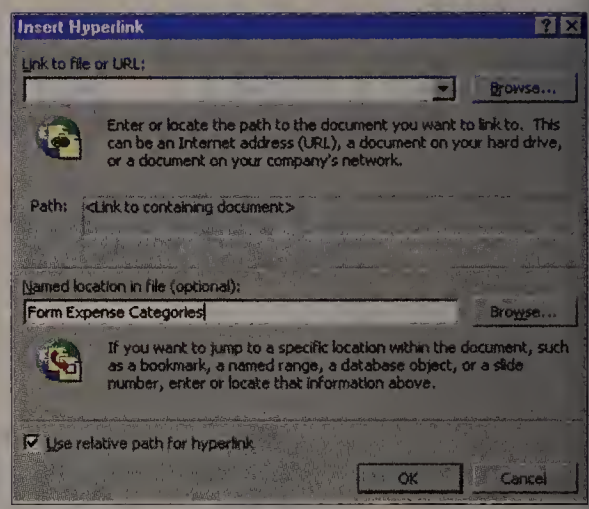



**FIGURE 2: LINK OTHER DATABASE OBJECTS, Office documents, or Web sites to a form or table in the Insert Hyperlink dialog box.**

## ADD A HYPERLINK FIELD TO A TABLE

1. OPEN THE TABLE in design mode, then add a new field and assign this field the *Hyperlink* data type. For this example, I added the hyperlink field Trip Report to the Expense Reports table. Save your change to the table.
2. To enter a hyperlink address in the Datasheet view, first move the cursor over to the hyperlink field, and then click the *Insert Hyperlink* tool.
3. Click the *Browse* button next to 'Link to file or URL', and in the Link to File dialog box, find the file you want to jump to. (I chose \My Documents\June Sales Trip .doc.) Double-click the file name, then click *OK* in the Insert Hyperlink dialog box to insert the address in the field.

## ADD A HYPERLINK FIELD TO A FORM

1. OPEN THE FORM in design view, highlight a text object for another field, and select *Edit•Duplicate* from the main menu.
2. Drag the copied text object to its new location on the form, right-click it, and choose *Properties*.
3. Set the *Control Source* setting to the name of the hyperlink field, and change the label to match.

Database Tips *welcomes your questions and pays $50 for published items. Contributing Editor Celeste Robinson is the coauthor of* Mastering Paradox 7 for Windows 95 *(Sybex, 1996, 800/227-2346).* *See page 14 for contact information.* ■

# THE COMPETITION JUST DOESN'T STACK UP

## AVerMedia's AVer TV-Phone is 5 Products in One!

**• INTERNET/POINT-to-POINT VIDEO PHONE • IMAGE/VIDEO CAPTURE • TV TUNER • FM TUNER • REMOTE CONTROL •**

**Finally you can have all of these features in one single package at a down-to-earth price of only $149* and it's only available from AVerMedia's AVer TV-Phone.**

**Internet/Intranet/Point-to-Point Video Conferencing**
Bundled with Smith Micro's video phone software, the AVer TV-Phone allows you to do video conferencing over the internet, intranet or point-to-point regular phone line (H.324 standard). Talking and seeing your friends and family over regular phone lines are no longer a scene from outerspace! You can do it all with the AVer TV-Phone.

**A True Entertainment Center for your PC**
The AVer TV-Phone is more than just a video phone kit. With a built-in PCI TV, FM Tuner and Capture Board, you can watch TV on your computer monitor, listen to FM while you work, and capture high quality images or video on your computer for presentation or internet purposes. More importantly, it comes with a fully functional remote control. Now you can sit back, relax, watch your favorite television programs or listen to FM radio using your remote control. If you prefer to work on your computer and watch TV or listen to FM radio simultaneously, you can actually use the remote control to change channels and control a whole lot of other functions without interrupting your work.

The AVer TV-Phone is great for the home as well as business, entertainment and multimedia applications . Visit our home page or call us to learn more about AVer TV-Phone's functions and minimum system requirements. So don't be out of touch with your friends and family. Get your AVer TV-Phone today!

AVerMedia®
Bridging PC/MAC & Video
**1-800-863-2332**
www.aver.com

**AVerMedia designs and manufactures a full line of multimedia video products including External TV Tuner/Game Display and PC/MAC-to-TV Converters.**

**AVerKey Plus**
- Affordable Easy Conversion From VGA to TV
- SIX-LINE Buffer Technology for Flicker Free TV Display
- Touch Button Control
- Supports Resolution up to 640x480 in 16.7 Million Colors
- Comp/S-Video Output

**AVer TVGenie**
- Watch TV, CATV, or Video on a VGA or Multi-Sync Monitor Without Turning on your Computer
- No Software Driver Required
- Full Screen Display
- Full Remote Control
- Stereo Audio Input and Output

AVerMedia Technologies, Inc. 47923A Warm Springs Blvd., Fremont, CA 94539 Tel: (510) 770-9899 Fax: (510) 770-9901
AVer TV-Phone, AVerKey Plus and AVer TVGenie are registered trademarks of AVerMedia Technologies, Inc. All other trademarks belong to their respective companies. © Copyright 1997 AVerMedia Technologies, Inc.(Features subject to change without notice.)
**Estimated Street Price. Desktop camera/camcorder, sound card and modem required for video phone application.*

Summertime reading ◆ Dial-up Shortcut ◆ Dictionary of hackerspeak

# Should You Upgrade Your Modem to 56 kbps?

DON'T YOU WISH that whenever Detroit came out with a new car you could trade in your old clunker for a faster model? That's the offer several modem manufacturers are making as cyberspace speeds up to 56 kbps.

Right now, the new modems support one of two competing (and incompatible) technologies. U.S. Robotics is pushing its x2 standard, while Rockwell Semiconductor Systems and Lucent Technologies tout their own K56flex. Both technologies employ an asymmetric transmission scheme by which a modem receives data at up to 56 kbps but can send it at only 33.6 kbps. Agreement over an international standard could be months away. (See "33.6 and Getting Faster.")

If you're eager to take advantage of the new speeds, which technology is best for you? It depends on which one your ISP or online service is using. Keep in mind that whether you choose an x2 or a K56flex modem, you'll probably have to upgrade again later to get the international standard. And keep in mind too that upgrading to 56 kbps from 28.8 kbps won't double your speed. In fact, a 43 percent boost is the most you may get, since 56 kbps is a maximum rather than average speed, and it can be achieved only on part of the route that connects you with your ISP.

U.S. Robotics offers several ways to upgrade to x2. All Courier V.34 modems can be upgraded for $60. You fill out a form and download the firmware update from the USR Web site (www.usr.com/x2) or BBS (847/982-5092), then call USR at 888/877-9249 for a code to activate the upgrade. You then install the firmware and turn the modem off and back on.

Non-x2 Sportster modems purchased since August 15, 1996, are also upgradable for $60, but most need a new ROM chip and must be shipped back to USR or taken to a participating retailer. The Sportster Winmodem is the only one that can be upgraded with software like the Courier models.

As we went to press, USR had not determined how its modems would be upgradable to the still-emerging international high-speed standard. But company spokesperson Philip Anast says that it will probably be a matter of downloading code, adding, "We're going to take people to the standard, whatever it is." To get more information on USR upgrades, call 888/877-9896.

Meanwhile, Hayes Microcomputer is offering low-cost modem trade-ins. Mail in any modem, no matter the brand, and for $89 to $99 plus $15 for shipping, Hayes will send you a K56flex modem. You can get more details about the trade-in plan at Hayes's Web site (www.hayes.com) or by calling 770/441-1617. Hayes claims that one third of the modems traded in so far have been USR models.

Hayes is also selling x2 modems under its Practical Peripherals brand. Hayes spokesperson Kerri Dimke says all 56-kbps modems obtained through Hayes will be upgradable for free to the international standard, probably through software.

Other vendors are taking Hayes's lead. Boca Research is letting its customers upgrade their 33.6-kbps Boca modems for $99 plus $14.95 shipping. Multi-Tech's V.34 modems can be upgraded for $99 plus $15 shipping if they were bought before February 1, 1997, and for $69 plus shipping if purchased after that date. Multi-Tech's 56-kbps modems aren't yet available, however.

## SUN, SURF, AND A GOOD READ

WHAT WOULD SUMMER be without lazy afternoons spent curled in a hammock reading a book that lacks any redeeming social value? Tap into one of the book sites listed in "Browse the Web's Bookshelves" to find the latest about your favorite genre or author. Some of the sites even offer databases of all the books written by every author in a certain genre (see **FIGURE 1**).

You can also try typing the name of a publisher into your browser as a URL—for example, www.randomhouse.com. ▶

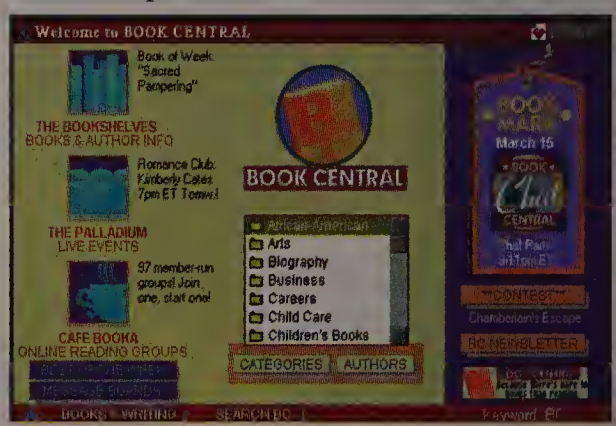
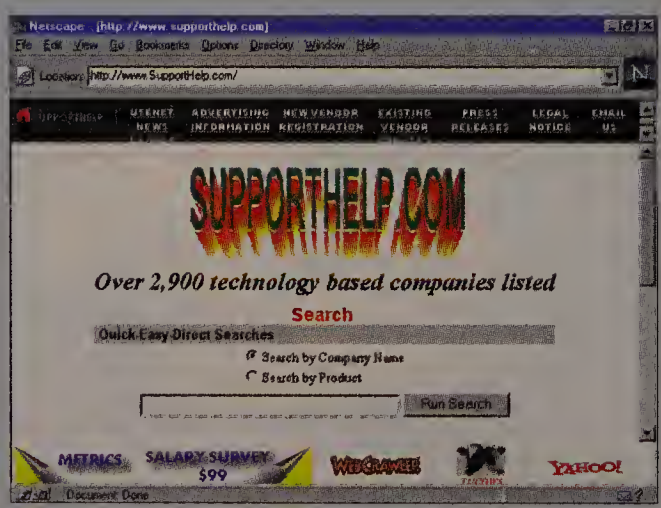



**FIGURE 1: AOL'S BOOK CENTRAL (keyword books) offers the latest about your favorite authors.**

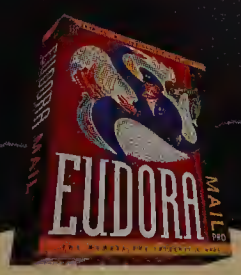
### One-Stop Tech Support on the Web

TIRED OF WAITING on hold for tech support while stuck with a dysfunctional tape backup or an inscrutable application? Tap into the SupportHelp.com site (www.SupportHelp.com). Search for a company by name, and SupportHelp.com directs you to any technical resources available for that company's products, including mailing lists, newsgroups, and other related sites (both official and unofficial). SupportHelp.com includes a database of toll-free numbers and main telephone contacts for almost 3000 PC companies.




**GET OFF THE PHONE and onto the Web for technical help from thousands of computer companies.**

# THE INTERNET'S MOST POWERFUL E-MAIL SOFTWARE STRIKES AGAIN.




*"Eudora Pro is as good as it gets."* —NetGuide

*"Eudora Pro is to e-mail what Netscape is to Web browsers."* —S.F. Chronicle

**INTRODUCING EUDORA PRO™ 3.0.**

With 10 million users, Eudora® products have made a huge impact on the Internet. And now there's something even more powerful: Eudora Pro 3.0, written to official Internet standards.

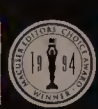
Eudora Pro 3.0 has improved message filtering and mail management tools that help you sort large volumes of e-mail in seconds. Advanced drag-and-drop capabilities let you easily attach files and manipulate text. Live hot links automatically open your Web browser and other Internet applications. And an expanded Address Book lets you store addresses and phone and fax numbers. You can even stylize text to make messages look like word-processed documents. And since Eudora Pro 3.0 is so easy to use, switching your company's e-mail software is a breeze.

To find out more, just call **1-800-2-EUDORA, ext. 86083**. Or send us e-mail at **eudora-sales12@qualcomm.com**. Or visit our Web site at **www.eudora.com/690** to download Eudora Pro 3.0 and use it FREE for 30 days. Why should Mother Nature be the one with all the power?

EUDORA™

## FREE 30-DAY TRIAL!

DETAILS AT OUR WEB SITE WWW.EUDORA.COM/690



Information regarding the number of Eudora Light and Pro users provided by the Third MIDS Internet Demographic Survey, December 1995, and IDC. Eudora is a division of QUALCOMM. QUALCOMM Enterprise Software Technologies, 6455 Lusk Blvd., San Diego, CA 92121-2779, USA. © 1996 QUALCOMM Incorporated. All rights reserved. Eudora is a registered trademark of the University of Illinois Board of Trustees licensed to QUALCOMM Incorporated. All other trademarks are property of their respective owners.

## Browse the Web's Bookshelves

| Web site and address | Comments |
|---|---|
| Amazon.Com<br>www.amazon.com | Internet bookstore with huge searchable database of just about every book in print |
| BookWeb<br>www.bookweb.org | The American Booksellers Association; news of the book world |
| BookWire<br>www.bookwire.com | Book news, including reviews, Publishers Weekly |
| MysteryNet.Com<br>www.mysterynet.com | News and chat about romance novels |
| Sisters in Crime<br>207.25.198.31/sinc | Worldwide organization of female mystery authors and fans |
| Spiff on Science Fiction & Fantasy<br>http.tamu.edu/~sdd2252/Docs/SciFi | Links to author and publisher pages, Internet discussions, and reviews |
| The Literary Times<br>www.tlt.com:80 | News and chat about romance novels |

Or enter the names of your favorite authors into a search engine to see if they have their own Web sites.

If you still can't find what you're looking for, try *The Book Lover's Guide to the Internet* by syndicated book reviewer Evan Morris (Ballantine, 1996, 800/793-2665).

### CREATE A SHORTCUT TO DIAL ANOTHER COMPUTER

PERHAPS YOU'RE TOO young to remember when people dialed in to other computers using nothing but a modem and a general communications program. Sometimes they still do, to log on to a BBS or a computer that's not on the Internet. For example, I regularly dial in to my local public library's card catalog.

In Windows 95, you can create a Shortcut that dials for you. Here's how.

1. Select *Start•Programs•Accessories•HyperTerminal*. (HyperTerminal is Windows 95's dialing program, and not a bad one.)
2. Double-click the *Hypertrm* icon in the resulting window.

3. In the Connection Description dialog box, type the name of the computer you want to dial in to and select an icon to represent it (see **FIGURE 2**). Click *OK*.
4. In the Phone Number dialog box, type in the phone number you want the program to dial, and click *OK*. In the Connect dialog box, click the *Dial* button to dial it now; otherwise, click *Cancel*.
5. Back in the HyperTerminal window, select *File•Save*. An icon for your settings will appear in the HyperTerminal window.
6. Drag this icon to your desktop to create the Shortcut.

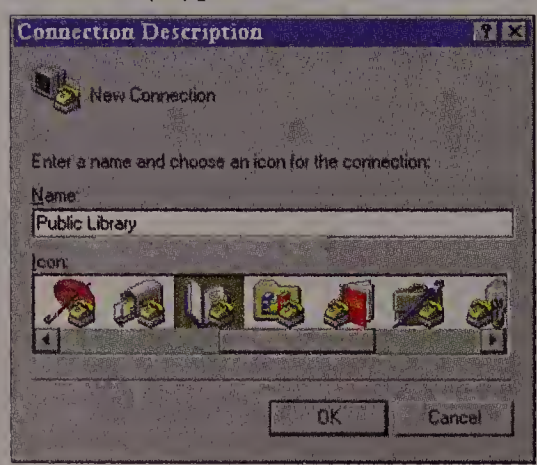



**FIGURE 2: ACCESS ANOTHER COMPUTER** by creating a Shortcut on your desktop.

### BROWSE FTP SITES FOR DOWNLOADS

MICHAEL LAMB of San Ramon, California, uses his Web browser to tap into FTP sites where he can download (or upload) software. To automate log-on, he added his user name and password to the URLs he accesses frequently.

The syntax for the URL you'd type into your browser would look like **ftp://username:password@ftp.hostname/directory/**. So to log on as an anonymous user to *PC World*'s FTP site and tap directly into the public directory (where all the downloadable goodies are stored), you'd type **ftp://anonymous:anonymous@ftp.pcworld.com/pub**.

### PRINTING SELECTIONS FROM WEB PAGES

IS THERE A WAY to print only a selection of text from a Web page? Often I'd like to forward a snippet of text in an e-mail message or send it to a printer or fax machine. But I always end up sending the entire page.

*Nick Blaha, Overland Park, Kansas*

YOU CAN TREAT TEXT on a Web page just as you would text in a word processing document. Highlight the text you want to print, e-mail, or fax. Copy it into the Clipboard (press **<Ctrl>-C** or select *Edit•Copy*). Then paste it into an e-mail message or word processing document (press **<Ctrl>-V** or select *Edit•Paste*) and print it.

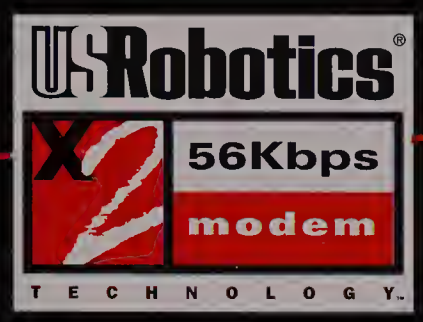
If you want to save the text of the page to print later, select *File•Save As* and save it as an HTML file (with formatting but no graphics) or as a text file (unadorned text). Then simply print it as you would any file.

### VISIT THE HACKER'S DICTIONARY ON THE WEB

ALEXANDER WEIS of Ein-Harod Ihud, Israel, found a version of the seminal Hacker's Dictionary that's better than the one printed in February's column (see "Web-Webster's Dictionaries"). The New Hacker's Dictionary (locke.ccil.org/jargon) is a compilation of computer-room slang from MIT, Stanford, and other computer science meccas. It has been in circulation since the genesis of the Net in the 1970s and offers glimpses into computer culture. (Did you know that hackers are more likely to own cats than dogs?)

Hackerspeak is rife with euphemisms for equipment failures (like *lossage*) and for hapless victims of computer caprice. For instance, a *headseeker* is one who buys the newest version of any product, regardless of its usefulness. The *lunatic fringe* are those who blithely run version 1 of a program without questioning if it works.

Internet Tips *welcomes your questions and tips and pays $50 for published items. Contributing Editor Judy Heim is the author of* The Needlecrafter's Computer Companion *(No Starch Press, 1995, 800/420-7240). See page 14 for contact information.* ■




# CONNECT NOW
WITH MORE THAN 300 ISPs LIVE TODAY

# GUARANTEED FREE UPGRADE
TO 56K ITU-T STANDARD

# ONE FREE MONTH
OF INTERNET SERVICE

30-DAY
# MONEY-BACK
GUARANTEE

* All x2 products are capable of 56 Kbps downloads, however, due to FCC rules which restrict power output of service providers' modems, current download speeds are limited to 53 Kbps. Actual speeds may vary depending on line conditions. Uploads from end users to providers travel at speeds up to 28.8 Kbps.
** An x2-capable modem, an x2-compatible local analog phone line and an x2-capable service provider are required for these high speed downloads. See www.usr.com/x2 for details.

©1997 U.S. Robotics. All rights reserved. U.S. Robotics, the USRobotics logo and Sportster are registered trademarks and Courier, x2 and the x2 logo are trademarks of U.S. Robotics. All other product names are used for identification purposes only and may be trademarks and/or registered trademarks of their respective companies. Product specifications subject to change without notice. 5.14.97 #2439

# x2 Delivers...guaranteed.

**Delivers...more than ever**

ery day, more and more information is added to Internet. Whether it's streaming audio or video, ger data files or richer graphics, never before has need for faster downloads been so great. That's y we created the new x2™ Technology 56K* modem, fastest ever for regular phone lines.

**Delivers...high download speeds now**

u don't need to wait to take advantage of this odem's superior download speed. That's because has already received the support of more than 0 Internet service providers (ISPs), from industry nts like America Online, Prodigy and NETCOM smaller regional providers. In fact, more than 300 them are live today, with many offering local cess. That means you can download at high speeds all 50 states right now with x2.** It's that simple.

**Delivers...free upgrade to standard**

u may already know that the international 56K odem standard hasn't yet been defined. That's ny we're offering a no-risk guarantee of a free grade to make your x2 Technology 56K modem meet the ITU-T standard. And since x2 uses DSP Solutions technology from Texas Instruments, it can easily be graded to future performance enhancements as ey're developed.

**2 Delivers...guaranteed**

prove just how committed we are to x2, we're troducing "x2 Delivers," a special program that ill show you why buying an x2 modem now akes so much sense:

***CONNECT NOW***
***in all 50 states and Canada***

*Right now, you can call an ISP and get x2 service, no matter where you live.*

***FREE upgrade to ITU-T standard***[1]

*After the new 56K ITU-T standard is approved, we'll upgrade your U.S. Robotics x2 Technology 56K modem – absolutely free.*

***FREE month of service***

*Now, for a limited time, when you purchase a U.S. Robotics x2 Technology 56K modem, we'll pay for one month of free service from any x2-capable Internet service provider – up to $25.*

***30-day money-back guarantee***

*We're confident you'll be completely satisfied with your new x2 modem. If not, return it within thirty days of purchase – no questions asked.*

See the back cover for complete details of the x2 Delivers program.

**x2 Delivers...an easy choice**

The ability to connect now in all 50 states and Canada. A free month of service. A free upgrade to the ITU-T standard. A 30-day money-back guarantee. It couldn't be any easier. For more information, visit **www.usr.com/x2now**, or call **1-800-525-USR1** to find a provider near you with live x2 service.

Download nearly twice as fast as 28.8 modems with the company that connects more people to the Internet than any other. If extra speed is what you're looking for, remember one thing: x2 delivers.

U.S.Robotics®

U.S.Robotics X2 TECHNOLOGY

# Delivers...

**CONNECT NOW** WITH MORE THAN 300 ISPs NATIONWIDE
**FREE UPGRADE** TO 56K ITU-T STANDARD
**FREE MONTH** OF INTERNET SERVICE (UP TO $25)
**30-DAY** MONEY-BACK GUARANTEE

**Buy any Sportster® or Courier™ 56K modem with x2 Technology between June 1 and September 15, 1997 and get one month of Internet service plus upgrade to 56K ITU-T standard,[1] FREE. And if you're not satisfied after 30 days you can return the modem for a full refund.**

To get your free month of Internet service with an x2-capable Internet service provider, just complete and return the card belo

Then, you'll also be registered for the free upgrade. After the ITU-T standard for 56K modems is approved, we'll upgrade U.S. Robotics x2 Technology 56K modem, free of charge. Since every x2 modem is equipped with Flash ROM, we expect the upgrade to be as simple as a software download from the Internet. If it's not, we'll replace your modem with one that does me the new standard – free of charge. Register your modem, and when the 56K standard is approved by the ITU-T, we will notify y how and when to get your free upgrade. Approval is expected sometime in early 1998.

And again, if you're not satisfied with your U.S. Robotics x2 Technology 56K modem, simply return it within 30 days of purchase, along with dated receipt, to the store or mail order reseller where you bought it for a full refund.

1 Guaranteed upgrade valid for all currently available Sportster 56K Faxmodems (Models 1784, 1785, 1786, 1787 and 1789) and Courier 56K Faxmodems (Models 1867, 1868 and 1869). This offer valid in the U.S. and Canada only.

## Get 1 month of Internet service from any ISP live now with x2 Technology (up to $25).

To get your free month of Internet service:

1. Buy any Sportster or Courier listed below between June 1 and September 15, 1997.
2. Call 1-800-525-USR1 or visit www.usr.com/x2now to find out if your current ISP has live x2 service now. If not, choose one of the x2-capable ISPs listed there.
3. Fill in all requested information on this card.
4. Enclose this completed form with a copy of your dated modem receipt, original UPC bar code symbol and serial number from the modem package (see samples below) and proof of your x2 ISP monthly fee (credit card bill or monthly statement) and mail to:
   **U.S. Robotics, x2 Delivers, PO Box 8061, Young America, MN 55551-8061**
   (Any questions regarding this program, please call 1-800-727-2107.)

(Please print all information clearly.)

**Name** _____

**Address** _____

**City** _____ **State/Prov** _____ **ZIP/POST** _____

**Country** _____ **Phone** _____ **E-mail Address** _____

**Retailer / Mail Order where modem purchased** _____

**ISP Name** _____ **Monthly fee** _____

Internet service offer valid with purchase of Sportster 56K models 1784, 1785, 1786, 1787 and 1789 and Courier 56K Faxmodems models 1867, 1868 and 1869 only, purchased between June 1, 1997 and September 15, 1997. Request must include copy of dated modem sales receipt, actual UPC bar code and serial number from the modem package, and proof of x2 ISP monthly fee. One Internet service refund per address. Not responsible for lost, late or misdirected mail. Request must be postmarked by November 15, 1997. Valid in U.S. and Canada only. Not valid with any other offer. Please allow 6 to 8 weeks for receipt of check.

**UPC SAMPLE**

**SERIAL NUMBER SAMPLE**

**The following UPC codes are the only acceptable codes for this offer. No other UPC codes are valid. Tape UPC bar code over this box.**

| | | |
|---|---|---|
| | 7-38168-00612-1 | 7-38168-00613-1 |
| 7-38168-00614-1 | 7-38168-00615-1 | 7-38168-00616-1 |
| 7-38168-00630-4 | 7-38168-00629-8 | 7-38168-00682-3 |

**Tape Serial number & bar code over this box.**

# Don't Get Caught In the ZIP...

## 540 Big MBytes per Disk

Catch Nomai, the smartest thing to come along in removable storage for the PC. The Nomai 540 is:

- **Fast** - 3X faster than a Zip® 100 drive for both access time and data transfer rate.

3 Times Faster Than ZIP 100

- **Flexible** - only Nomai can use two types of 3½" media. Either Nomai 540 MByte disks, or SyQuest® compatible 270 MByte disks. Now available in internal & external for SCSI or external parallel.

Also Uses 270MByte Disks

- **Fantastic** - at just 11 cents per MByte, it's nearly half the cost of Zip media per MByte.

Use your Nomai 540 for:

- transporting almost any size file in your pocket
- Internet file downloads
- unlimited extension of your hard drive
- backup & archiving

Catch Nomai, the faster, smarter choice in removable hard disk storage.

NEW LOW PRICE!

NOW $229* with 540MB Disk Included!

*Price for external parallel port version after manufacturer's mail-in rebate. Price before rebate $279. Rebate offer expires 7-31-97. Pricing and specifications subject to change without notice.

NOMAI™

www.nomai.com

Microsoft® Windows®95 Compatible

Mac OS

TigerDirect 1-800-888-4437

COMPUSA THE COMPUTER SUPERSTORE 1-800-COMPUSA

T zone 408-733-9920

9 TO 5 COMPUTER SUPPLY DISTRIBUTORS FAMILY OWNED AND OPERATED 1-800-334-3280

The PC Zone Your Catalog SuperStore 1-800-416-9663

NCA Computer Products 1-800-961-1200

ELECTRONICS BOUTIQUE 1-800-800-0032

NOMAI USA Toll Free **1-888-99-NOMAI**. Call for distributor and reseller opportunities. All trademarks are properties of their respective companies.

**Circle 161 on reader service card**

# Add the Right Memory

HERE ARE THE TWO great myths from the Pacific Northwest: the legend of Bigfoot, and the claim that Windows 95 can run well with 8MB of memory. If you've got anything less than 16MB, it's time to think about a memory upgrade, and you may want to move all the way up to 32MB. Here's how to pick what you need.

## BANG FOR THE BUCK

UPGRADING MEMORY from 8MB to 16MB is easily the best value for your money. *PC World* tests show it boosts Windows 95 performance on Pentiums by up to 29 percent (see "Upgrades: The Best for the Buck," November 1996). And if you really *use* your computer—say you commonly have a word processor, spreadsheet, e-mail program, and Web browser open at the same time—you should move on up to 32MB. Switching between programs will be much faster and quieter.

## DO YOUR HOMEWORK

THE HARDEST PART of installing more memory is making sure you buy modules of the right type, speed, and size. The wrong memory just won't work. But ads for memory can be rather cryptic (see **FIGURE 1**). And opening up your computer and looking at the modules doesn't really tell you much, either. Your best bet is to check your system manual or call the manufacturer and confirm the following points about your system's memory:

**Type.** RAM comes in several different types. If you've got a 486 or an older Pentium, you're probably using Fast Page Mode RAM. The successor to FPM RAM is called Extended Data Out RAM and runs 10 to 15 percent faster. Positioned to replace EDO RAM is Synchronous Dynamic RAM, which further boosts performance through superior synchronization with the CPU and other components. Generally, you can't mix memory types.

**Socket.** Memory chips come mounted on a small card known as a SIMM (single in-line memory module) or, on newer systems, a DIMM (dual in-line memory module). Each has a row of pins on an edge connector at the bottom of the card that fits in a socket on the motherboard. SIMMs come with either 30 or 72 pins, while DIMMs have 168 pins (see **FIGURE 2**).

**Speed.** Memory chips are designed to operate at certain maximum speeds, typically 60, 70, or 80 nanoseconds (billionths of a second). Placing fast RAM on a motherboard designed for a slower memory speed is okay, but it won't buy you any quicker performance. Never put slower memory on a faster motherboard.

**Parity.** Memory modules are either parity or nonparity. A parity module has an extra chip, usually a ninth, added for error checking. Some motherboards work with either parity or nonparity modules, but not with both types in combination.

**Size.** When adding memory, size and symmetry matter. SIMM sockets are usually arranged in banks, or groups, of two sockets each. Both sockets in a single bank *must* be filled with SIMMs of identical memory size. For example, if your computer currently has 8MB of RAM and two SIMMs in the first bank (Bank 0), then each of the SIMMs is 4MB in size.

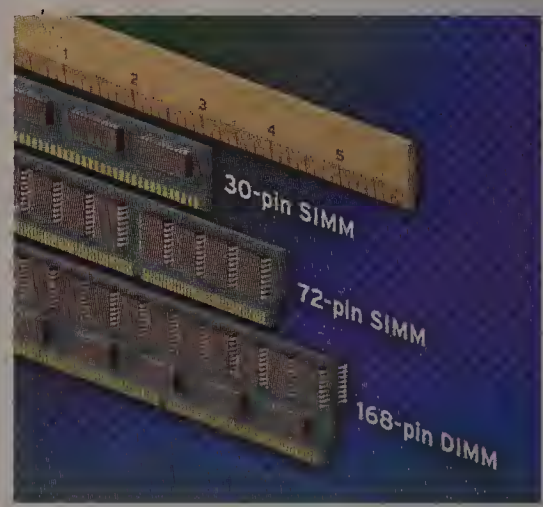



**FIGURE 2: MEMORY MODULES come in the three basic sizes shown here.**

It's important to check your motherboard and see how many free sockets you have before you buy. Let's say in the above example you had two free SIMM sockets in the second bank (Bank 1). To upgrade your system from 8MB to 16MB, you would need two more 4MB SIMMs; one 8MB SIMM won't work. To upgrade to 24MB, you might be able to put two 8MB SIMMs in Bank 1; many motherboards will let you use different-size SIMMs in different banks. But some require all SIMMs in all banks to be identical; check your documentation.

*Find more tips at www.pcworld.com/hereshow.* Hardware Tips *welcomes your questions and tips and pays $50 for published items. Kirk Steers is a* PC World *contributing editor. See page 14 for contact information.* ■

## How to Read a Memory Ad

FIGURE 1: Advertisements for memory modules can be downright cryptic. Here's how to interpret them correctly.

**TYPICAL 30-PIN SIMM AD**

| What it says | What it means |
|---|---|
| 1 x 9-60 | 1MB, 60ns parity SIMM |
| 4 x 9-70 | 4MB, 70ns parity SIMM |

- First number is size in MB.
- Second number is number of chips on the SIMM; 9 denotes a parity SIMM.
- Third number is speed in nanoseconds.

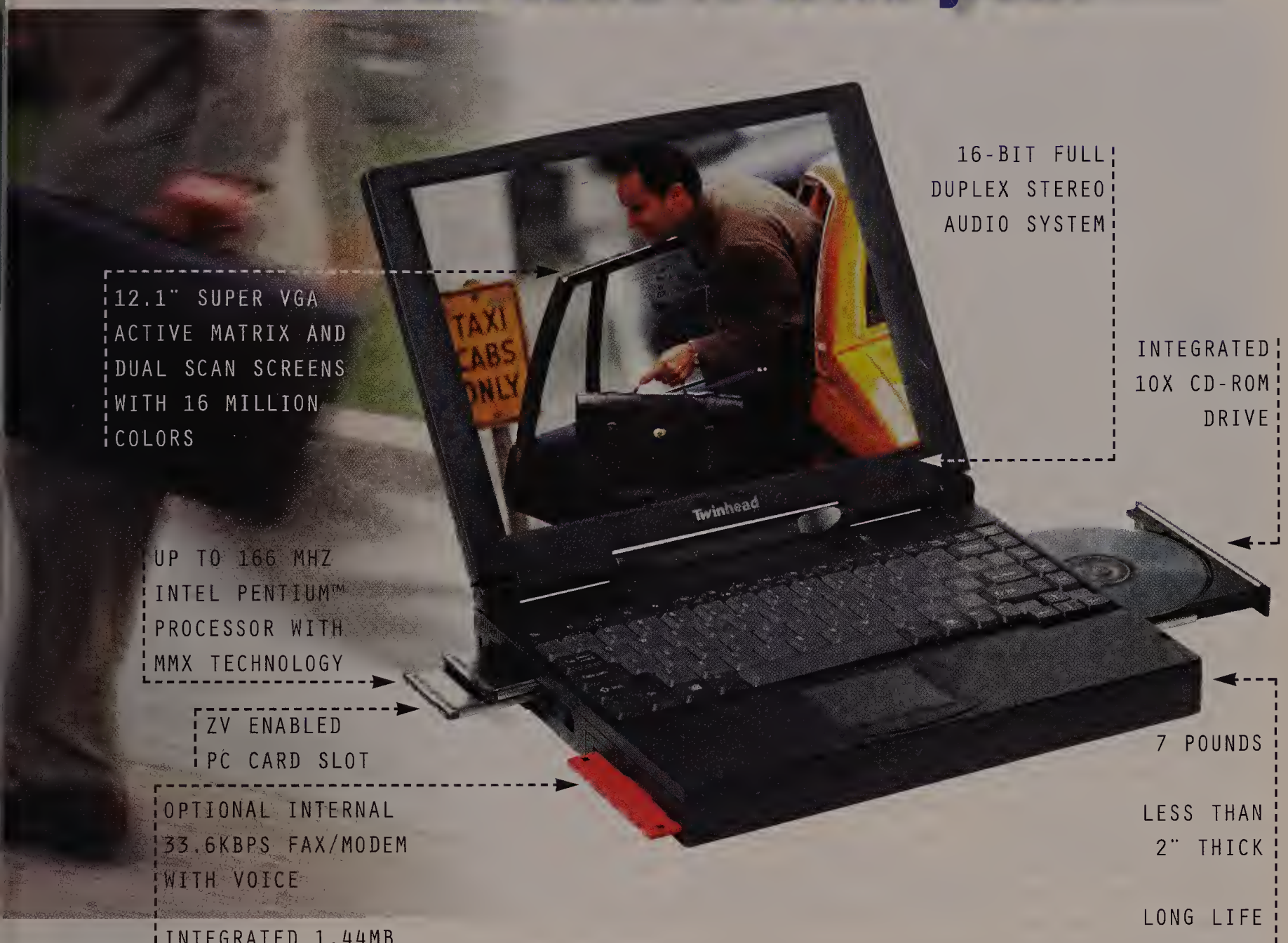
**TYPICAL 72-PIN SIMM AD**

| What it says | What it means |
|---|---|
| 1 x 32-60 | 4MB, 60ns nonparity SIMM |
| 2 x 32-70 | 8MB, 70ns nonparity SIMM |
| 4 x 36-60 | 16MB, 60ns parity SIMM |
| 8 x 36-70 | 32MB, 70ns parity SIMM |

- First number is one-quarter the size in MB.
- Second number is number of chips on the SIMM times 4. 32 denotes nonparity; 36, parity.
- Third number is speed in nanoseconds.

INFOGRAPHIC: K. DANIEL CLARK

# You can take it with you.




## Powerful multi-media features, ready to go, anytime, anywhere.

For people that want full-on multimedia power at their fingertips anytime, anywhere, Twinhead presents its exciting new Slimnote 9. A multimedia marvel that features a 10X CD-ROM and floppy drive co-existing in the system at the same time.

For over a decade, Twinhead has been manufacturing notebooks for some of the biggest names in the business. Now that same quality and experience is available to you in our own Slimnote Brand. When it comes to mobile computing, Twinhead is truly Two Steps Ahead.™ Plus, all Slimnotes are backed with our exclusive ExpressCare program, providing you with 48-hour service and toll-free support.

- Only 7 pounds, including CD, Floppy & Battery
- 10X CD-ROM and Floppy co-exist
- 64-bit PCI graphics accelerator with 2Mb of video memory
- ZV-enabled PC Card Slot

**Call Twinhead today for more information!**

**Slimnote 9133TZ**
**Survivor of the 5th Annual PC Computing Torture Test**
***—April 1997***

Twinhead *Two steps ahead*™

West – Phone: 800-995-8946 • East – Phone: 800-552-8946 • Phone: 510-492-0828 • Fax: 510-492-0820
www.twinhead.com • Twinhead Corporation • 48295 Fremont Blvd. • Fremont, CA 94538

MMX™ intel inside pentium® PROCESSOR

Copyright ©, 1997, Twinhead Corporation, All Rights Reserved. Reproduction without the express written permission of Twinhead Corporation is prohibited.
All specifications and configurations subject to change without notice. Twinhead, the Twinhead logo and Slimnote are registered trademarks of Twinhead Corporation. Intel, the Intel Inside Logo and Pentium are registered trademarks of Intel Corporation. All other trademarks acknowledged.

**Circle 240 on reader service card**

# Getting Started With Digital Video Editing

**GOT ANY ADVICE on buying and using a cheap video capture board to edit camcorder movies?**

*John Clifford, Chevy Chase, Maryland*

YOUR TIMING IS GREAT. With high-speed Pentiums, gigabyte-size hard drives, and fast graphics and video accelerators becoming common and digital video hardware and software prices dropping, more and more of us are transferring our videotapes to PCs for editing.

Whether you want to produce lively videos for business presentations or Web pages, add flashy transitions and special effects, or just get your favorite home video clips into PC form, a host of affordable video capture boards is available.

Here are some pointers to help you select the system that's best for you.

**One-way versus two-way boards.** In general, there are two types of video capture boards: A "one-way" board provides video input connectors only; a "two-way" board also has video output connectors.

An input-only board is fine if you just want to create video for playback on a PC—a multimedia presentation, for example, or a Web page. But if you also want to copy your digitally edited video back to videotape, you'll need a combination input/output board.

You'll find a range of input-only capture boards, costing as little as $199 on the street, from companies such as Creative Labs (www.creativelabs.com), Intel (www.intel.com), and Winnov (www.winnov.com). Combination boards from companies such as Alaris (www.alaris.com), Data Translation (www.b-way.com), and Truevision (www.truevision.com) typically cost at least $400. Most capture boards now provide both composite (RCA-type) and higher-quality S-Video connectors.

**Sound considerations.** Most video capture boards provide video connectors only, so you'll need a separate sound card (or sound-enabled motherboard) to record sound as well as video during capture. Some video capture boards provide their own audio input connectors—a nice convenience if your PC lacks a sound board.

Although most video capture software gives you an option to synchronize audio during capture, some people prefer to record video and sound separately, and sync them together later.

**PCI versus ISA boards.** For best results, choose a PCI-based video capture board over an ISA-based board. You'll pay more, but get better video quality.

**Capture size.** Most low-end boards let you capture video at a maximum size of 320 by 240 pixels, commonly referred to as quarter-screen size. You may be satisfied with viewing quarter-screen videos on a PC screen, and even smaller videos on the Internet. But if you transfer your edited video back to videotape and view it on a TV set, you may be disappointed, since the video will retain its quarter-screen size. For instance, a 320-by-240-pixel image translates roughly to a 7.5-by-5.5-inch image on a standard 19-inch TV.

For best results in transferring your work back to videotape for TV viewing, get a board that lets you capture video at 640 by 480 pixels, or at least 320 by 480 pixels. Both sizes provide a larger screen image on a standard TV set. Bear in mind, however, that these higher resolution videos make much larger files than 320-by-240 videos, so you'll probably need gigabytes of storage space, too.

**Frames per second.** Most of the current crop of low-end video capture cards let you capture various resolutions at up to 30 frames per second, which is an ideal speed for smooth-looking playback on a TV set. If you capture at a slower speed, the file size will be smaller but the video may look jerky. Don't settle for a board that captures less than 30 fps.

**TV tuners.** Some video capture boards come with a built-in TV tuner that brings television to your PC. To use this option, you simply attach a coaxial video cable from the TV to the input on the board.

**Your PC's capabilities.** The system you'll need depends on how you'll use your videos. If you want to capture short clips and play them in informal situations, you may like the Alaris QuickVideo ISA board, which requires only a 486DX2/66 with 8MB of memory and 20MB of free hard disk space. But performance and quality will improve with a higher end PC. If you want to capture and edit longer clips and copy them to videotape, get a Pentium-class PC with at least 16MB of memory and 500MB of free hard disk space.

**ADD JAZZY EFFECTS, like the peeling page and opening door here, with video editing. These were created with a MiroVideo DC10 video capture board and Ulead MediaStudio video editor.**

*Find more tips at www.pcworld.com/hereshow.* Multimedia Tips *welcomes your questions and tips and pays $50 for published items. Richard Jantz is a computer consultant and freelance writer in Kensington, California.* *See page 14 for contact information.* ■

C O M P U T I N G  W I T H O U T  L I M I T S™

# When The Armed Forces Realized That Our TurboChip Could More Than Double The Speed Of Their 486s, They Decided To Pick Some Up.

The military has to be able to act quickly, and so do their computers. Maybe that's why they decided to upgrade their 486s with Kingston® TurboChips—an approved component on the GSA purchasing schedule. The TurboChip™ can extend the life of your fleet, too, whether you have 486-based DX2, DX, SX2, or SX systems. In the words of an Army computer scientist at the Army's Pentagon Automation Technology Branch, "The Kingston chip was completely compatible with all our systems and had an amazing performance improvement."* The TurboChip's 5×86 clock-quadrupled technology helps your system run up to three times faster with all the power you need to run today's demanding software. Designed with AMD's Am 5×86–P75 CPU, it upgrades most IBM-compatible desktop systems. And since the TurboChip is a chip-for-chip replacement upgrade, it's easy to install. Plus, it preserves your system configuration. Call today to find out why the military says, "Looking at the true cost of installing an upgrade CPU, the Kingston unit is a steal."

**Unleashes the power of Windows NT®4.0**

Kingston® TECHNOLOGY

*For more information call us at (800) 588-5517* ISO 9001 SGS *Visit our Web site: http://www.kingston.com/pcw.htm*

CPU by AMD Am5x86-P75

*10/31/96 evaluation by Ron Jarmuth, Chief Automation Technology Branch, HQDA–IMCEN, Pentagon Automation Technology Branch. Kingston Technology Company, 17600 Newhope Street, Fountain Valley, CA 92708 USA, (714) 435-2600, Fax (714) 435-2699. © 1996 Kingston Technology Company. All rights reserved. Kingston is a registered trademark and Computing Without Limits and TurboChip are trademarks of Kingston Technology Company. Windows NT is a registered trademark of Microsoft Corporation.

**Circle 128 on reader service card**

# Swap In a New Motherboard

YOU CAN PLAY with processor upgrades, add memory, or plug new cards and peripherals into your computer. But nothing turbocharges an aging PC like a motherboard transplant.

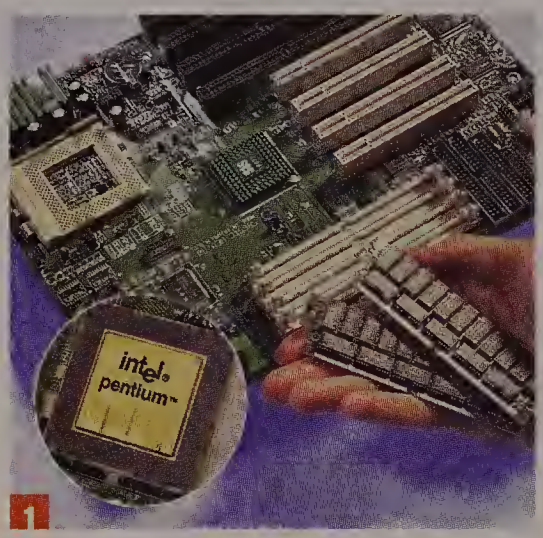
Changing a motherboard requires many careful steps, but you can handle the job if you're comfortable with PC upgrades in general.

Before you begin, make sure your PC has a standard motherboard. Some name-brand systems don't. Compare your present motherboard to a standard one if you can. Otherwise, check whether the serial and parallel ports are soldered to the motherboard and stick out the back of the case; if so, you're in trouble.

Look for a "Baby AT" motherboard. Don't buy an ATX motherboard, which requires a special case and power supply.

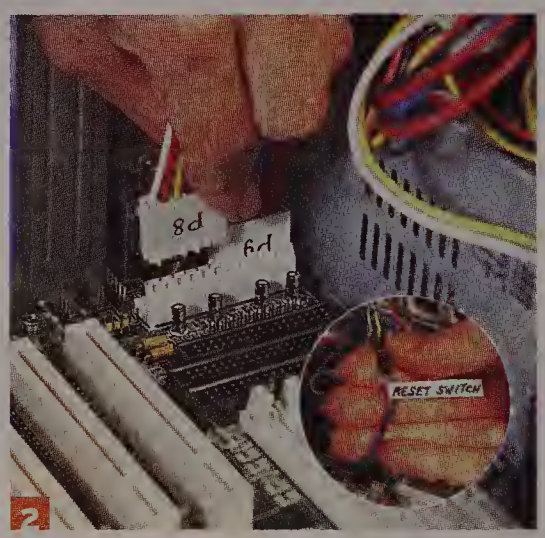
Here's a quick rundown on how to make the swap. For a more detailed version, check out www.pcworld.com/hereshow.

*Stan Miastkowski is a* PC World *contributing editor.*



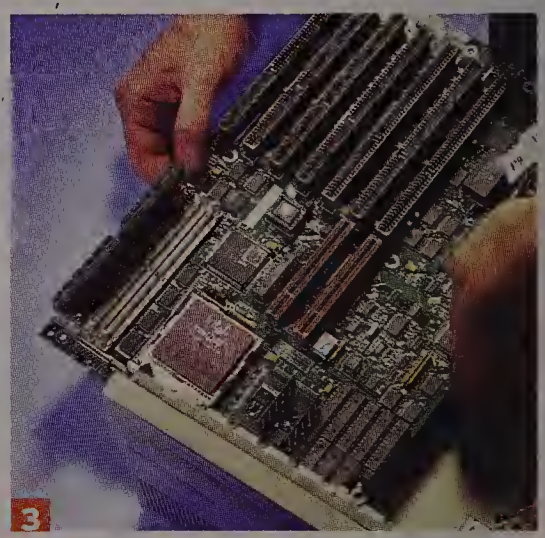

1

**Check your motherboard.** Make sure your new motherboard's screw holes and card slots fit your system case, and that you can use your existing add-in cards if needed. Access your PC's system start-up program and note your hard disk's parameters. Turn off your computer and open the case.




2

**Disconnect wires and cables.** Use masking tape to label wires and cables. Unplug all external peripherals. Disconnect the cables from add-in cards and take out the cards. Remove the main motherboard power connectors. Remove the small wires at the front of the motherboard.

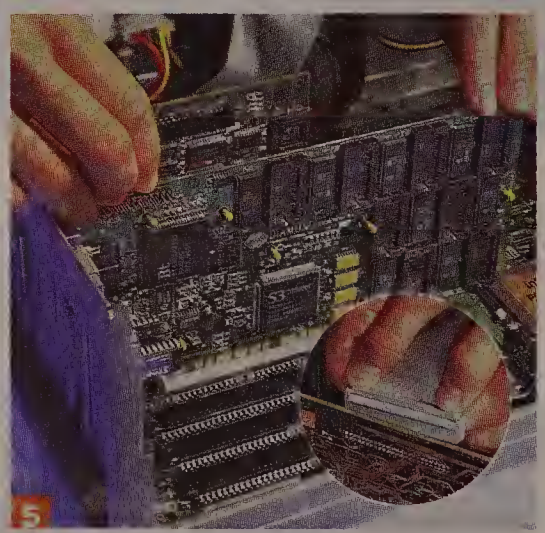


3

**Out with the old.** Touch your hand to a grounded object, and remove the screws holding the motherboard. (If it also is held by white plastic posts, grab the motherboard and slide it slightly to the left, which should release the posts from their slots.) Lift the motherboard carefully from the case.

4

**In with the new.** Add the CPU and memory to the new motherboard if necessary. Check all jumpers and use needle-nose pliers if you need to reset any. If the old motherboard has plastic posts, remove them with the pliers and add them to the new motherboard. Insert the new motherboard and replace the screws.



5

**Replace cards and cables.** Connect all the cables and connectors (usually for the floppy drive, hard disk, CD-ROM drive, and serial and parallel ports) and the small wires for the CPU fan, speaker, reset button, turbo light, and any other integral components. Replace all other required cables.

6

**Start it up.** Turn on your PC and monitor. You should see a new BIOS message. If you get an error message, enter the system start-up utility and fill in information as needed. Then restart, click your way through Windows 95's messages if that's what you're running, and enjoy the new speed! ■

PHOTOGRAPHS: KEVIN CANDLAND

# Why 7 out of 10 people choose Family Tree Maker*

"Online links make your research easier."

"★★★★... Excellent!" 9/12/95

"...Easy to use..." 9/12/95

"...Best-in-its-class..."

## #1 Selling and Best Value

Why should you choose the program 7 out of 10 family history enthusiasts choose? Quite simply, Family Tree Maker's huge community of users and vast database of genealogy records will help you find your ancestors. And this award-winning program gives you the best variety of beautiful printouts.

## Find Your Ancestors Fast

Unlike other family tree programs, Family Tree Maker™ actually helps you find your ancestors. Just click the FamilyFinder™ button to search a list of 115 million people from centuries of genealogy records. You'll instantly learn where to find more information about possible ancestors. And, if a distant relative has already traced your family tree, you may find it on one of the accessory CD-ROMs that work with Family Tree Maker. In fact, we have the world's largest collection of actual family trees and genealogy records on CD-ROM. Save precious time while tracing your family tree from the comfort of your home!

## Join a Huge Community of Users

We've sold nearly one million copies of Family Tree Maker. And thousands of those users visit our Web site every single day. Just click the Online button from inside Family Tree Maker and you'll be on the Internet, too. Once there, use our FREE matching service to quickly find others working on your same family tree. Create a FREE Web page for your family. Or post a FREE classified advertisement seeking family information. If the Internet contains information about your family, we'll help you find it fast!

## Create Heirloom-Quality Family Trees

Family Tree Maker makes it rewarding and fun to preserve your family history for future generations. The program stores literally any kind of information. Start with names, dates, and basic facts. Record cherished family stories. Include photos and video clips, too. Then, choose from a variety of attractive printouts to share with your family—beautiful family trees, family journals, scrapbooks, and more.

## Let Family Tree Maker Help YOU

Don't miss the chance to preserve your family history before more time slips away. Order today! Or find Family Tree Maker at a software store near you. Satisfaction guaranteed.

Brøderbund®

*According to PC Data, Reston, VA, 7 out of 10 people buy Family Tree Maker over other family tree programs (Jan-Jun 1996). Available now for Windows 3.1 & Windows 95. Macintosh version available early 1997. Features vary according to platform and price. Accessory CDs sold separately. ©1996 Brøderbund Software, Inc. All products are trademarks of their respective holders.

Source Code 510

**Call us at 1-800-474-8696 or visit www.familytreemaker.com**

# The faster you go, the more productive you become. The more productive you become, the faster you can go.

Things get ugly fast.

Your thoughts are racing like a bullet train, but your computer just can't keep up. Lag. Pause. Whir. Yawn.

Seconds lost. Minutes lost. Ideas lost. Sanity lost.

Time to check out the PCs you'll find on the most productive desktops anywhere. Ours.

Sys Technology has a solution for every user. And one for every budget. From state-of-the-art 266MHz Pentium® II processor based systems to 133MHz Pentium processor based Value Editions. Every Sys has the same endearing quality. It extracts maximum performance from its price/CPU level. (Did you know that some of our 166MHz systems actually outperform the competition's 200MHz systems?)

MMX™ intel inside pentium® PROCESSOR

*Ask about our new Pentium II processor based systems.*

Maybe that's why NASA, JPL, MIT, Northrop, Intel, the Department of Defense and tens of thousands of other enlightened users have Sys systems humming away under their roofs.

Or, maybe it's the fact that Sys delivers the exact system you need–custom-built from an amazing array of options in an amazing range of configurations–within 5-7 days. That your system is extensively pre-tested and burned-in to make sure it produces flawlessly right out of the box. That you get 24/7 phone support. A full year on-site service. Optional extended warranties. And a money-back satisfaction guarantee for 30 days.

Besides, with all the time you save with Sys, you can get something you've always wanted. A life.

**PERFORMANCE TESTS**

Source *PC Magazine*, December 3, 1996

| | |
|---|---|
| *Winstone 97 High-end* | |
| Sys Performance P200 | 20 |
| Micron Millennia Pro 2 200 Plus | 19 |
| Dell XPS Pro200n | 18 |
| Gateway 2000 G6-200 | 17 |
| *Winstone 97 Business* | |
| Sys Performance P200 | 58 |
| Micron Millennia Pro 2 200 Plus | 58 |
| Dell XPS Pro200n | 54 |
| Gateway 2000 G6-200 | 50 |

*Of this group of computers only the Micron Millennia Pro 2 200 Plus approached Sys' performance scores but costs approximately 20% more.*

To order a standard or custom system, visit us at http://www.systechnology.com or call

**800-613-9963**

**Circle 214 on reader service card**

# COLOR SCANNER $1.00

**with the Special Packages below purchased before 9/1/97***

**SYS VALUE EDITION systems**
**Base Price: $1,179**

- 133MHz Intel® Pentium® processor, OverDrive ready; dual channel PCI bus master, EIDE controller; floppy controller; integrated high-speed serial ports (2) and ECP/EPP parallel port (1)
- 256K Pipeline Burst Cache
- 16MB 60ns, 32-bit EDO RAM
- Hard Drive - 1.2GB 5200rpm, EIDE
- Teac 1.44MB Floppy
- Diamond Stealth (1MB)
- Monitor - 15" Sys, high res .28 dot pitch
- Sys 104 key Windows 95 Keyboard
- Microsoft serial mouse
- Case - Mini-Tower, 7 drive bays, 250W power supply
- 12X CD-ROM Drive
- Sound Blaster 16
- 80W powered speakers
- Operating System - Windows 95 (preinstalled, with CD & docs)

**SYS PERFORMANCE systems**
**Base Price: $2,149**
**SPECIAL PACKAGE - get a color scanner for $1.00***

- 200MHz Pentium® processor with MMX™ technology
- OverDrive ready, dual channel PCI bus master, EIDE controller; floppy controller; integrated high-speed serial ports (2) and ECP/EPP parallel port (1)
- 512K Pipeline Burst Cache
- 16MB 60ns, 32-bit EDO RAM
- Hard Drive - 2.1GB 5400rpm, fast ATA-2
- Teac 1.44MB Floppy
- Matrox Millennium 2MB WRAM 64-bit accelerator
- Monitor - 17" Sys, high res .26 dot pitch, 95KHz refresh
- Sys 104 key Windows 95 Keyboard
- Microsoft serial mouse
- Case - Mini-Tower, 7 drive bays, 250W power supply
- 12X CD-ROM Drive
- Sound Blaster 16 Vibra stereo
- 80W powered speakers
- Operating System - Windows 95 (preinstalled, with CD & docs)

**SYS PERFORMANCE systems (Pentium® Pro processor)**
**Base Price: $2,649**
**SPECIAL PACKAGE - get a color scanner for $1.00***

- 200MHz Pentium® Pro processor, 256K L2 cache
- Intel 440FX Motherboard with EIDE controller; floppy controller; high-speed serial ports (2) and ECP/EEP parallel port (1); directly supports ECC; 512MB max. system RAM.
- 32MB 60ns, 32-bit EDO RAM
- Hard Drive - 2.1GB 5400rpm, fast ATA-2
- Teac 1.44MB Floppy
- Matrox Millennium 2MB WRAM 64-bit accelerator
- Monitor - 17" Sys, high res .26 dot pitch, 95KHz refresh
- Sys 104 key Windows 95 Keyboard
- Microsoft serial mouse
- Case - Tower, 8 drive bays, ATX form factor, 235W power supply
- 12X CD-ROM Drive
- Sound Blaster 32 PnP wavetable
- 80W powered speakers
- Cardinal int. 33.6K, V.34 Modem w/ 14.4 fax
- Operating System - Windows NT Workstation v.4.0 (preinstalled, with CD & docs) (Windows 95 optional)

*Limit of one color scanner per Special Package Sys Performance system purchased.

©1997 Sys Technology, Inc.

YOUR **brain** USES ONLY A **fraction** OF ITS CAPACITY.

WE THINK YOUR **hard disk** SHOULD BE A BIT MORE **efficient** THAN THAT.

UP TO **40%** OF YOUR HARD DISK MAY BE **wasted space.** RECLAIM IT WITH **PartitionMagic® 3.0!**

PC manufacturers typically ship hard disks formatted with one large partition. You know it as the C: drive. Without repartitioning, that drive uses large, inefficient storage units or clusters to store your data. The result is that up to 40% of your hard disk's capacity can be totally wasted. PartitionMagic lets you solve that problem by dividing your hard disk into smaller, more efficient and better organized partitions. Up to hundreds of megabytes of wasted disk space can be reclaimed quickly and easily. It's a no-brainer. For more information, visit our web site at: **www.partition.com.**

**"How much extra space did I get on my hard drive? Would you believe 108 megabytes?** Hiawatha Bray, ***Boston Globe***

**"PartitionMagic ... not only gives you more space for data, but lets you manage your data better."** Jim Sundeen, ***PC Today***

**Buy PartitionMagic 3.0 and get $15 back from PowerQuest.® Visit your local software reseller or call 1-800-720-0399 for details.**

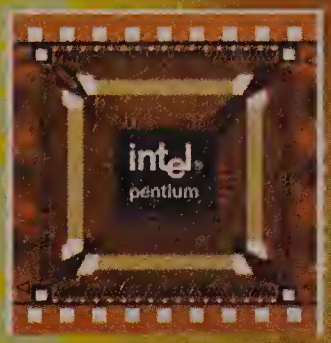
Babbagge's • Best Buy • CompUSA • Computer City • Egghead
Electronics Boutique • Fry's • J&R • Micro Center • Office Depot • Software Etc.

© 1997 PowerQuest Corporation. All rights reserved. PowerQuest and PartitionMagic are registered trademarks of PowerQuest Corporation. Patents pending.

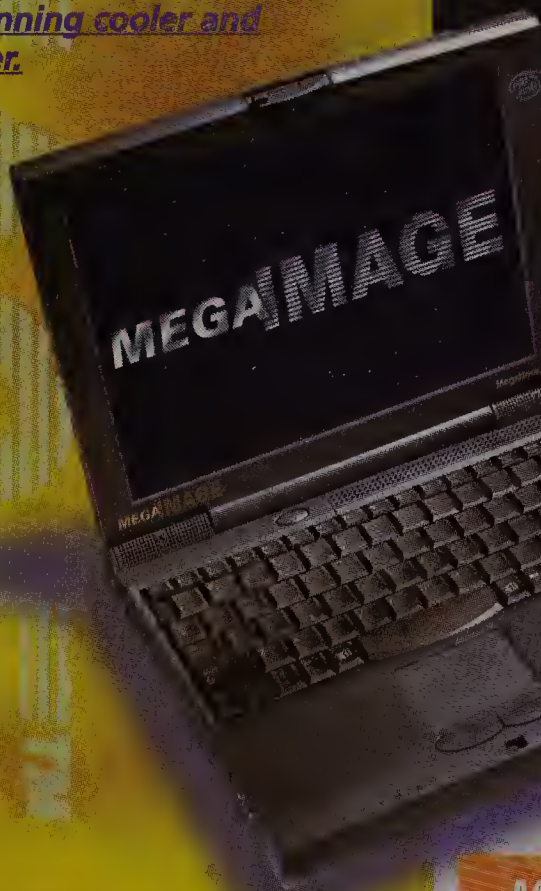
POWER® PQ QUEST

Circle 191 on reader service card

# Bringing you the future... Today




***Pentium TCP Processor***
The 2.9V Intel's Pentium tape carrier package (TCP) CPU, which weights under 1 gram and sizes only 29 Square millimeters, has been designed especially for notebook computer operation to offer superior thermal resistance characteristic and greatly reduces power consumption over regular PGA type CPU, therefore, ***your notebook is running cooler and faster.***




## MEGABOOK 911MX

**MEGABOOK 911R-TMX**
- Pentium - 150 MMX
- 12.1" Active TFT SVGA
- 16 MB EDO Memory
- 1.3 GB HDD
- 10X CD Rom

**$ 2599**

**MEGABOOK 911R-DMX**
- Pentium - 150 MMX
- 11.3" Dual Scan
- 16 MB EDO Memory
- 1.3 GB HDD
- 10X CD Rom

**$ 2199**

## MEGABOOK 911

**MEGABOOK 911Platinum Plus**
- Pentium - 150
- 12.1" Active TFT SVGA
- 16 MB EDO Memory
- 1.3 GB HDD
- 6X/10X CD Rom

**$ 2399**

**MEGABOOK 911Platinum**
- Pentium - 133
- 12.1" Active TFT SVGA
- 16 MB EDO Memory
- 1.3 GB HDD
- 6X CD Rom

**$ 2199**

## OPTIONAL

- PCMCIA Cards (Fax/Modem, Ethernet,...)
- Mini Docking Station
- Extra Battery
- Car Adapter
- Quick Charger

## EXCELLENT CUSTOMER SUPPORT

- 24 hrs, 7 days a week toll-free technical support
- 1 year parts and labor warranty
- Optional extended 3 years on site service available
- 72 hours hot-swap on all repairs

◆ **Business Lease Available**

**Circle 135 on reader service card**

COMPUTER SHOPPER — April '97 ... An excellent desk-top replacement

LAPTOP BUYER'S GUIDE & HANDBOOK BEST BUY — March '97 ... A super performer

PC LapTop — March '97 ... Performance was impressive even with multiple application

PC WORLD TOP 20 — March '97 ... Very fast multi-media notebook

PC WORLD TOP 20 — April'97 ... Very fast multi-media notebook

PC WORLD TOP 20 — May '97 ... Very fast multi-media notebook

OPG &H BEST BUY — June '96 ... A best buy

not responsible for any typographical errors

**MMX TECHNOLOGY**
- ✔FAST PROCESSORS
- ✔ENHANCED AUDIO
- ✔BRILLIANT VIDEO
- ✔EXCITING NEW SOFTWARE

intel inside pentium

Designed for Microsoft Windows 95

CE

ISO 9001


MEGAIMAGE™ INC.
1-800-250-1876
Fax: (714) 228-5599
http://www.megai.com

# Life IS FULL OF choices

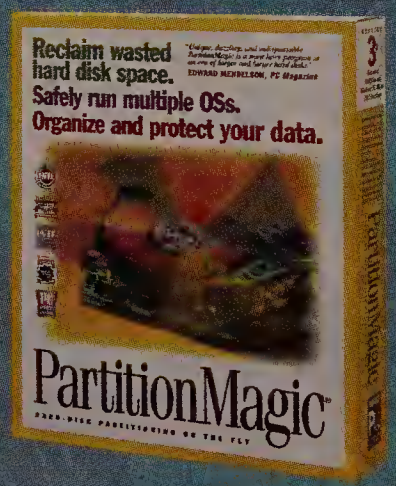
SO WHY limit YOURSELF TO JUST ONE FLAVOR OF operating system?

## NOW YOU CAN safely RUN multiple operating systems WITH PartitionMagic® 3.0!

Admit it, you'd like to nibble at the latest flavors of Windows 95 or Windows NT without giving up the comfort of your current operating system. PartitionMagic makes it safe and easy by allowing you to install operating systems into their own physically separate partitions. And once you've installed a second or third operating system, PartitionMagic makes it easy to switch between them using Boot Manager. So nibble away – and still play it safe, with PartitionMagic! For more information, visit our Web site at **www.powerquest.com.**

**"It's amazing that the computer industry managed so long without PartitionMagic."**
**Esther Schindler, *PC Magazine***

**"Unique, dazzling, and indispensable, PartitionMagic is a must-have program in an era of larger and larger hard disks."**
**Edward Mendelson, *PC Magazine***



**Buy PartitionMagic 3.0 and get $15 back from PowerQuest.® Visit your local software reseller or call 1-800-720-0399 for details.**

Babbagge's • Best Buy • CompUSA • Computer City • Egghead
Electronics Boutique • Fry's • J&R • Micro Center • Office Depot • Software Etc.

© 1997 PowerQuest Corporation. All rights reserved. PowerQuest and PartitionMagic are registered trademarks of PowerQuest Corporation. Patents pending.

POWER® PQ QUEST

Circle 191 on reader service card

# Training Videos for Windows Software

KeyStone Learning Systems

Microsoft SOLUTION PROVIDER

**Alison Balter**
Microsoft Certified
& Access Instructor

**Robert MacHale**
Professional Trainer
& Internet Instructor

**Dawn Bjork**
Microsoft Certified
& Word Instructor

### NEW Access 97*

| | |
|---|---|
| Beg/Int/Adv | (ea) $49.95 |
| Special-All Three | $129.95 |
| Develop. Lev 1/2/3 | (ea) $89.95 |
| Develop. Lev 4/5/6 | (ea) $89.95 |
| ODE Tools | $89.95 |
| Access & the Internet | $89.95 |
| Access Enterprise | $89.95 |
| Special-All Nine | $649.95 |

### NEW Windows NT 4.0*

| | |
|---|---|
| Server Admn. Lev 1 | $89.95 |
| Server Admn. Lev 2 | $89.95 |
| Covers Exam 70-67 | |
| Enterp. Admn. Lev 1 | $89.95 |
| Enterp. Admn. Lev 2 | $89.95 |
| Covers Exam 70-68 | |
| Special All Four | $329.95 |
| Serv. & Wrk. Install | $89.95 |
| Covers Exam 70-63 & 70-73 | |
| Workstn. Admn. Lev 1 | $89.95 |
| Workstn. Admn. Lev 2 | $89.95 |
| Workstn. Admn. Lev 3 | $89.95 |
| Covers Exam 70-73 | |
| Special All Four | $329.95 |
| Workstn. User Level 1 | $49.95 |
| Workstn. User Level 2 | $49.95 |
| Both Videos | $89.95 |
| Special All Ten | $699.95 |

### NEW IIS 3.x

| | |
|---|---|
| Level 1/2/3 | (ea) $89.95 |
| Special-All Three | $249.95 |
| Covers Exam 70-77 | |

### NEW TCP/IP

| | |
|---|---|
| Level 1/2 | (ea) $89.95 |
| Special-Both Videos | $169.95 |
| Covers Exam 70-53 | |

### NEW Internet Explorer 3.x*

| | |
|---|---|
| Internet Explorer 3.x | $49.95 |

### NEW Front Page 97

| | |
|---|---|
| Level 1 | $89.95 |
| Level 2 | $89.95 |
| Level 3 | $89.95 |
| Special-All Three | $249.95 |

### Java

| | |
|---|---|
| Level 1/2/3 | (ea) $89.95 |
| Level 4/5/6 | (ea) $89.95 |
| Special-All Six | $449.95 |

### NEW Visual J++ 1.x

| | |
|---|---|
| Level 1/2/3 | (ea) $89.95 |
| Level 4/5/6 | (ea) $89.95 |
| Special-All Six | $449.95 |

### KeyNotes Free HTML

| | |
|---|---|
| Level 1 | $89.95 |
| Level 2 | $89.95 |
| Level 3 | $89.95 |
| Special-All Three | $249.95 |

### NEW ActiveX/Automation

| | |
|---|---|
| Level 1/2/3 | (ea) $89.95 |
| Level 4/5/6 | (ea) $89.95 |
| Special-All Six | $449.95 |

### NEW Visual Basic 5.0*

| | |
|---|---|
| Level 1/2/3 | (ea) $89.95 |
| Level 4/5/6 | (ea) $89.95 |
| Client/Server Dev. | $89.95 |
| Three-Tier Arch. | $89.95 |
| ActiveX Controls | $89.95 |
| ActiveX Automation | $89.95 |
| Special-Any Three | $249.95 |
| Special-All Ten | $699.95 |

### NEW Word 97*

| | |
|---|---|
| Beg/Int/Adv | (ea) $49.95 |
| Mail Merge | $49.95 |
| Forms/DTP | (ea) $49.95 |
| Internet | $49.95 |
| Special-All Seven | $279.95 |

### NEW Outlook 97*

| | |
|---|---|
| Basics | $49.95 |
| Power Features | $49.95 |
| Special-Both Videos | $89.95 |

### NEW Excel 97*

| | |
|---|---|
| Beg/Int/Adv | (ea) $49.95 |
| Power Features | $49.95 |
| Pivot Tables | $49.95 |
| Shortcuts & Ideas | $49.95 |
| Special-All Six | $239.95 |

### KeyNotes Free Windows 95*

| | |
|---|---|
| Beg/Int/Adv | (ea) $49.95 |
| Network/Install | (ea) $49.95 |
| Special Features | $49.95 |
| Special-Any Three | $129.95 |
| Special-All Six | $239.95 |

### NEW PowerPoint 97*

| | |
|---|---|
| Beg/Int/Adv | (ea) $49.95 |
| Special-All Three | $129.95 |

### KeyNotes Free Project 4.1*

| | |
|---|---|
| Level 1/2/3/4 | (ea) $89.95 |
| All Four Videos | $299.95 |

**Over 450 Titles**

Average: 2 hours of training per video

Domestic Shipping 2-3 Days: $5.00 for the first two videos, plus $1.50 for each additional video tape. International Orders: Shipping cost will vary, call for details.

All Videos Available In PAL (European Format)

** Other versions available*
*Prices and course may vary*

Ask about KeyNotes $14.95 ea — KeyStone's Quick Reference

RISK FREE 30 DAY Money Back Guarantee

## Office 97

**Special** MS Office 97 or 95* Video Combinations

**Microsoft Office Standard** ..... $349.95 (WITH KeyNotes $469.95)
- 3 Word, 3 Excel, 2 PowerPoint, 1 Outlook
- 9 videos with over 17 hours of training

**Microsoft Office Pro** ..... $495.95 (WITH KeyNotes $639.95)
- 3 Word, 3 Excel, 3 Access (Beg/Int/Adv)
- 3 PowerPoint, (1 Outlook or 1 Mail)
- 13 videos with over 24 hours of training

**Microsoft Office Plus** ..... $579.95 (WITH KeyNotes $749.95)
- 3 Word, 3 Excel, 3 Access (Beg/Int/Adv)
- 3 PowerPoint, 3 Windows, (1 Outlook or 1 Mail)
- 16 videos with over 29 hours of training

MS Office Integration Video **$19.95** with any Combo purchase

Microsoft SOLUTION PROVIDER

## Developer

**Special** Developer Pack Video Combinations

**Developer Power Pack** Standard ..... $649.95
- Any 9 videos (Save $108)

**Developer Power Pack Pro** ..... $799.95
- Any 12 videos (Save $129)

**Developer Power Pack Plus** ..... $1,139.95
- Any 18 videos (Save $219)

Choose From:
Visual Basic • SQL Server • Access 95 Developer
Visual C++ • Visual FoxPro • Delphi • Front Page • HTML
PowerBuilder • Java • JavaScript • Visual J++ • ActiveX

## COREL Office

**Special** Corel Office Video Combinations

**Corel WordPerfect Suite Standard** ..... $349.95
- 3 WordPerfect, 3 Quattro Pro, 3 Presentations
- 9 videos with over 17 hours of training

**Corel WordPerfect Suite Professional** $495.95
- 3 WordPerfect, 3 Quattro Pro, 3 Presentations
- 1 Envoy, 3 Windows
- 13 videos with over 24 hours of training

**Corel Office Professional** ..... $579.95
- 3 WordPerfect, 3 Quattro Pro, 3 Presentations
- 3 Paradox, 1 Netscape Nav., 1 Envoy, 2 Groupwise
- 16 videos with over 29 hours of training

COREL SOLUTION PARTNERS

## 4 Easy Ways to Order:

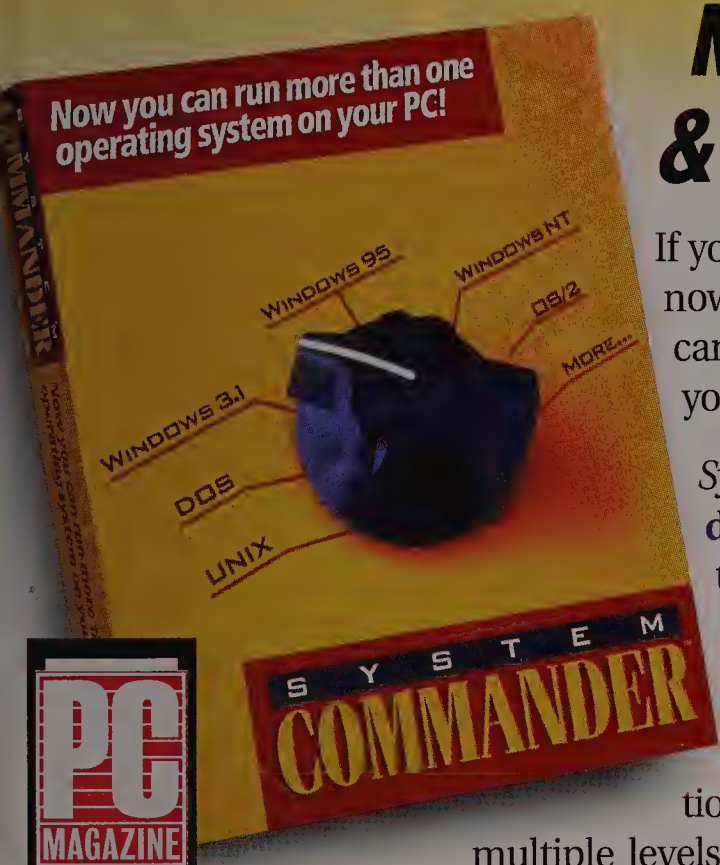
CALL ▶ 1-800-976-1040 (801-375-8680)
FAX ▶ 1-801-373-6872
WWW ▶ www.klscorp.com
MAIL ▶ KeyStone Learning Systems Corp.
2241 Larsen Parkway • Provo, UT 84606

AD# PW77

We accept C.O.D., Company P.O. or check + DISCOVER NOVUS VISA MasterCard American Express

Circle 115 on reader service card

# Windows 95 without Risk!




## Now you can run both Win 95 & DOS/Win3.x on the same PC!

If you've been considering Windows 95, but have "upgrade phobia", now *System Commander* lets you switch without fear! In fact, you can run Windows 95, 3.1, NT, OS/2, and DOS ***without*** repartitioning your PC, unless you want to . . . *safely, effortlessly and inexpensively.*

*System Commander* is an indispensible tool for **developers, help desk, tech support, classrooms** and **labs** by allowing the installation of up to 100 OSes on one machine. Once installed, switch from one OS to another with just a reboot and click of a button.

It prepares your PC automatically for new OSes in 5 minutes, allows you to boot from any combination of hard drives, partition and install up to 32 OSes in a single FAT partition, and offers multiple levels of security. Use any combination of Intel-compatible OSes in English or **any other language**. *System Commander* uses less than 1MB of hard drive space and, since it uses ***no*** resident memory, it can't conflict with your existing system. So to minimize your equipment expenses and gain almost limitless multi-OS flexibility - *Get System Commander, the "mighty superhero to users of multiple operating systems."** *Infoworld

PC MAGAZINE BEST OF 1996
Jan. 7, 1997

### *Run any or all of these operating systems on one PC!*

- **Windows**
  - Windows 3.x
  - Windows 95
  - Windows 95J
  - Windows 97
  - Windows NT3
  - Windows NT4
- **DOS**
  - DOS/V
  - DR-DOS
  - MS-DOS
  - Novell-DOS
  - PC-DOS
  - PTS-DOS
  - SDOS
- **UNIX**
  - Coherent Unix
  - FreeBSD
  - Interactive Unix
  - Linux
  - Lynx OS
  - Minix
  - NetBSD
  - NeXT Step
  - OpenStep
  - SCO Unix
  - Solaris
  - UnixWare
  - XENIX
- **Others**
  - OS/2
  - NetWare
  - CTOS
  - Pick
  - QNX
  - THEOS
  - CP/M

**"System Commander is a blooming miracle"**
*Jerry Pournelle, BYTE*

System Commander is only $99.95 and comes with an UNCONDITIONAL 60-DAY MONEY BACK GUARANTEE!

*Get FREE overnight shipping** when you mention this ad.*

1995 BYTE POURNELLE'S USER'S CHOICE AWARD
April 1996

**"Highly recommended"**
*John C. Dvorak*
*PC Magazine*

**Call today, have it tomorrow!****

**800-648-8266**

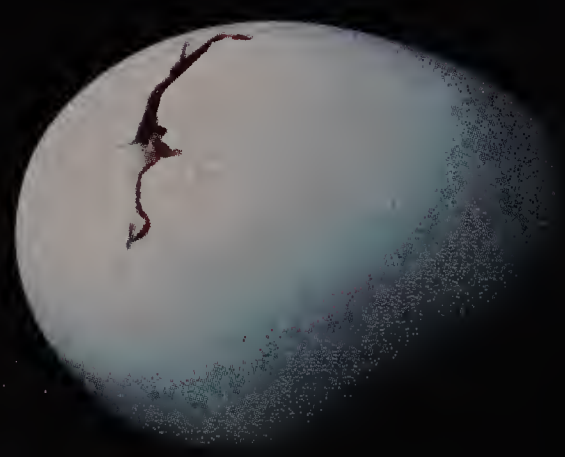
**www.v-com.com**

V Communications, Inc. • 2290 North First St., Ste 101-PCW • San Jose, CA 95131 • (408) 965-4000 • Fax (408) 965-4014

** When ordered before noon PST. No Saturday delivery. Continental US. CA res. add $7.25 sales tax. Offer subject to change without notice.
All logos and product names are trademarks of their respective companies. VISA/MC/Amex ©1997

**Circle 255 on reader service card**

DAZZLE
PICTURE & LIVE VIDEO



*Something big is breaking - June 17*

Circle 176 on reader service card

# GrabiT!

## Turns your camcorder into a digital camera

1997 PCG&V HIGHLY RECOMMENDED

**Here's just a taste of what you can do with GrabIT.**

Make an advertisement.

Make a wedding album

Make a calendar.

Make a greeting card.

**FREE! Now includes $150 worth of software**
Family Album Creator, iPhotoExpress and PhotoMorph 2.

Available at

EGGHEAD Computer Software & Hardware

Fry's ELECTRONICS

BEST BUY

MICRO CENTER THE COMPUTER DEPARTMENT STORE

Mail Order: PC Zone at 1-800-258-2088, MicroWarehouse 1-800-367-7080, Global Computer Supplies at 1-800-8GLOBAL, Damark at 1-800-729-9000, TigerDirect at 1-800-888-4437.

**Take a snapshot of your favorite video from any video source in 1,440 by 960 resolutions in 16 millions color.**

GrabIT is a fun, simple way to get color images onto your PC from any video source - including your camcorder, laser disc player, cable or broadcast TV source, or S-VHS video connection.

It's easy to install. Just plug GrabIT into your printer port of your PC or notebook computer. Connect a camcorder and with a click of the mouse your capturing images into your PC.

With the GrabIT, you can use your pictures for web page publishing, multimedia presentations, disk-based catalogs, personal photo albums, image databases, digital greeting cards, newsletters, school reports or family projects - like T-shirts, morphing fun, posters and etc. You can even e-mail pictures to friends and family around the world.

**$129.95** A.S.P

AIMS

**Visit our web site at http://www.aimslab.com**

AIMS Lab Inc., 46740 Lakeview Boulevard, Fremont 94538. Phone 510.661.2525 Fax 510.252.1572
© 1996, 1997 AIMS Lab Inc. GrabIT is a registered trademark of AIMS Lab Inc.
All other trademarks or registered trademarks are property of their respective owners.

**Circle 19 on reader service card**

# PC Connection®

7 Time Award Winner! PC WORLD 1996 WORLD CLASS Best Mail-Order Company!

Order as late as 3 a.m. ET and still get Overnight Delivery!
FAX US AT: 603-446-7791

# Get the Best for Less!

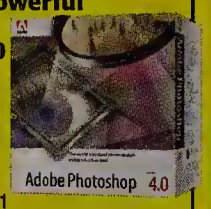
## UPGRADE!

### Director 6 Multimedia Studio

Exclusive Offer! FREE Zip Disk and Photodisc Content with Purchase!

NEW! Upgrade Only $489.95 38644

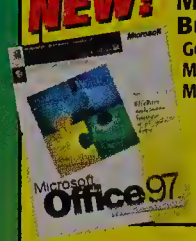
### NEW! More Powerful than Ever! Photoshop 4.0



New features, new filters, new special effects!

Upgrade Only $134.95 32921

### NEW! MS Office 97 Small Business Edition



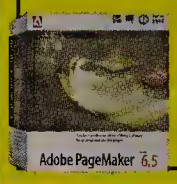
Get FREE Business Tools! Make sure to ask about our Microsoft Summer Promo!

Upgrade Only $199.95* 36691

*after rebate, ask for details

### Adobe PageMaker 6.5

The professional choice in desktop publishing!



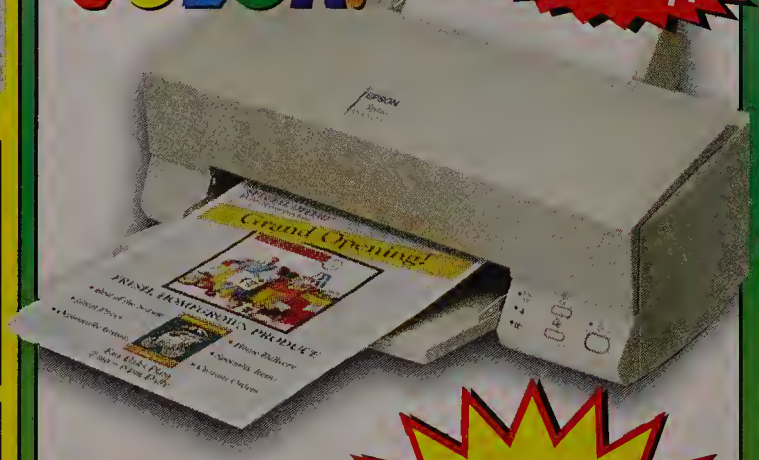
WE HAVE THE LOWEST UPGRADE PRICE!

Only $94.95 32847

## Epson Stylus Color 600 Inkjet Printer

COLOR!

Breakthrough 1440 x 720 dpi



4ppm photo-quality color! 6ppm black and white!

Only $299 37819

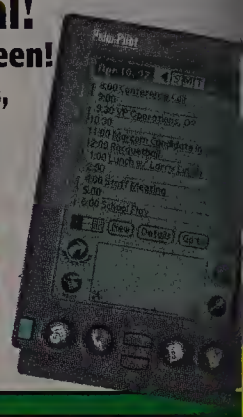
## New Version! PalmPilot Professional!

PalmPilot U.S. Robotics The Intelligent Choice in Information Access

Full 1MB Storage! Backlit Screen!

Keep track of contacts, appointments, expenses and tasks, all in the palm of your hand!

Only $379.95 39153



## New Low Price! Canon Powershot 600

Digital Cameras AS LOW AS $199.95

- Fully automatic
- 832 x 608 dpi
- 24 bit color
- Incl. PhotoImpact Softwar

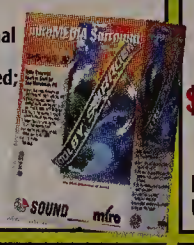
33825

## Peripherals!

### miroMEDIA Surround

Lets you get true Dolby Surround sound with 5 speakers!

Compatible with any sound card or external source TV or CD player! Dolby certified; easy to install!



Only $89.95 39169

### SyJet 1.5GB External SCSI Drive

32594

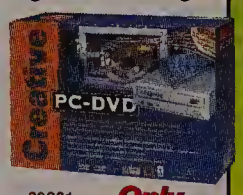
Only $499

SyQuest®

Huge, Super Fast Drive! Unlimited storage potential!

### Long awaited, ground-breaking technology!

Creative PC-DVD Internal DVD-ROM Kit. The ultimate multimedia experience!



39801 Only $495

CREATIVE CREATIVE LABS, INC.

## LEXMARK Optra E Laser Printe

COMPARE! LOWEST PRICE

$399

26976 600 dpi! 6ppm!

### NEW! Sountastic 16X Internal CD-ROM Drive

Hi VAL

Only $169.95

Incredible! The Fastest CD-ROM Drive Available! 38326

### Sportster 56K Internal Faxmodem

U.S. Robotics The Intelligent Choice in Information Access

Only $199.95 Internal

The Fastest Modem Ever! Break the 33.6 Barrier! 37315

### AVerKey Plus

18130

Only $89.95

It's easy! Use your TV as a monitor for any computer application!

## What A DEAL!

Now Only $499

17" .28mm monitor from MagInnovision! High-Quality Color Monitor 710V²! 38305

MAG INNOVISION

### VELO 1 4MB with Dock

Put the power of Windows in the palm of your hand! Runs Pocket Word, Pocket Excel, and Pocket Internet Explorer Download. Also uploads and synchronizes with your PC

$739.95 39257

### Zip Disk 10-Pack

Save 100MB at a Time and Save Money Too!

Only $12.99 per disk, after rebate!

10 Pack Only $129.95*

The more you buy, the more you save!

*after $20 rebate 19872

iomega

### Super Fast, Super Portable, Super Newton 2000!

Powerful! As fast as a high-end desktop!

Fits in your pocket!

Shown with optional keyboard

Only $949 36376

WORLD CLASS 1990 1991 1992 1993 1994 1995 1996 1997

OUR POLICY • VISA, MASTERCARD, AMERICAN EXPRESS, and NOVUS cards. No surcharge. • Most products are covered by manufacturer's warranty against defects for at least 30 days from the invoice date. • All returns require prior authorization; please call for an RMA • We are not responsible for typographical errors. • Pricing and promotions are subject to change without notice. Continental U.S.: Shipping Charges: $5 per order up to 10 pounds. On orders weighing 10 pounds or more, shipping is $1 per pound. Please call for weight/shipping charge information. Items of excessive size and/or weight may require additional days to deliver via a freight carrier. Please check with your sales rep for more details. Barring events beyond our control, all credit card orders phoned in weekdays by 3 a.m. ET will ship Airborne Express for delivery the next business day. Saturday delivery available to many areas upon request at no additional charge. Order all day Saturday thru noon Sunday for Monday delivery. Some areas require an extra day delivery. APO/FPO, International orders and Hawaii, Alaska, Canada, Puerto Rico & U.S. Virgin Islands: Shipping may require additional time and charges. All other areas: Call 603-446-4444 or FAX 603-446-7791 M-F 8 a.m.-5:30 p.m. ET.

## Toshiba Satellite Pro 430CDS Notebook

**Mobile, Powerful Multimedia**

- 120MHz Pentium
- 16MB EDO RAM, exp. to 48MB
- 11.3" passive display
- 10X CD-ROM
- 1.26GB HD
- Fully multimedia ready!

ONLY $1698

TOSHIBA

35175

## COMPAQ Presario

**Incredible Performance, Unbelievable Price!**

Presario 8772 shown $2599 #37166

- Up to 200MHz
- 48MB RAM
- 6.5GB hard drive
- 16X CD-ROM
- JBL speakers
- 6MB video with gameplay 3D graphics
- 33.6 faxmodem
- Bundled software

STARTING AT JUST $999

40763

## THE BEST PRICES ON PC SYSTEMS!

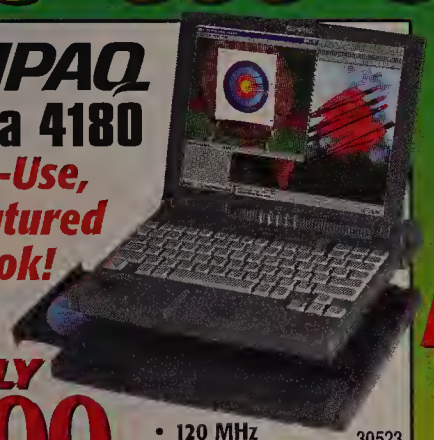
Call Us First!

800-800-CPUs

## COMPAQ Armada 4180

Easy-to-Use, Full Featured Notebook!

Join with optional docking unit



ONLY $1299 while supplies last!

- 120 MHz
- 16MB RAM
- 11.3" passive display
- 1GB HD
- Includes modem!

30523

SAVE ask about... LEASING OPTIONS for BUSINESS CALL FOR DETAILS

NEW! Extended Service Plan

Supplement the mfr.'s warranty for 4 full years from date of purchase!

## ThinkPad 365X

IBM Business Partner

**Unbeatable Combination of IBM Performance and Economy!**

NEW LOW PRICE Starting At $1349

- 133MHz
- 8MB RAM
- Type III PC Card Slot
- 11.3" Passive Display
- 1.08GB HD
- Trackpoint III Pointing Device

32972

## Software!

| | | |
|---|---|---|
| Business | | |
| 37347 | Alpha Complete Landscape Designer | $44.95 |
| 35054 | BizPlanBuilder Interactive | 149 |
| 36975 | Integra Transus D | 159.95 |
| 39316 | Recollect/Scanner Bundle | 149 |
| 37871 | SoftDesk Planix Deck Design | 39.95 |
| Entertainment/Games | | |
| 33895 | Monopoly | 39.95 |
| 40212 | Perfect Weapon | 39.99 |
| 40200 | RandMcNally Business Travelers Suite w/atlas | 79.95 |
| 33510 | Scrabble | 39.95 |
| 40213 | Tenpin Alley | 39.95 |
| Graphics & Design | | |
| 32847 | Adobe PageMaker Windows Version Upgrade | 94.95 |
| 32920 | Adobe Photoshop Full Version | 549.95 |
| 32921 | Adobe Photoshop Version Upgrade | 134.95 |
| 29509 | Corel WordPerfect Suite Windows Full Version | 249.95 |
| 29510 | Corel WordPerfect Suite Windows Version Upg | 89.95 |
| Utilities | | |
| 32894 | CleanSweep | 36.95 |
| 6508 | Conversions Plus 3.5 for Windows | 89.95 |
| 26128 | Dr. Solomon's Anti-Virus Toolkit-Windows 95 | 79.95 |
| 34905 | First Aid 97 | 34.95 |
| 31822 | Norton Antivirus Windows 95 | 69.95 |
| 32853 | Norton Utilities Windows 95 | 74.95 |
| 35300 | Partition Magic | 64.95 |
| 34180 | Quickview Plus v.4 | 47.95 |
| 34646 | Seagate Backup for Windows 95 | 69.95 |
| 39340 | VirusScan | 49.95 |

## Peripherals!

| | | |
|---|---|---|
| Accessories | | |
| 38599 | Apple Newton 2000 | $1099 |
| 39535 | Kensington Orbit | 59.95 |
| 39257 | Philips VELO | 69.95 |
| 39020 | 100 CDR disks | 739.99 |
| Monitors | | |
| 36819 | Hitachi SuperScan 803 | 1999 |
| 25716 | Magnavox CM-5600 | 1199 |
| 29185 | NEC MultiSync M700 | 799 |
| 34930 | Sony MultiScan 200SX | 699 |
| 38080 | ViewSonic Optiquest V773 | 599 |
| Printers | | |
| 31536 | Canon BJC 4200 (price after $50 rebate) | 229 |
| 20991 | Costar LabelWriter XL Plus (price after $40 rebate) | 199.95 |
| 35047 | Epson Photo PC 500 | 499 |
| Scanners | | |
| 36564 | Microspeed Wireless Keyboard | 139.95 |
| 39729 | Microtek PageWiz Color | 159 |
| 40455 | Visioneer PaperPort STROBE | 299 |
| Storage | | |
| 23616 | Iomega Jaz Drive | 399.95 |
| 35631 | Pinnacle Micro CDR74 10 Pack | 59.95 |
| 31128 | Seagate 1.2GB Internal IDE Drive | 199.95 |
| 27883 | Western Digital 2.GB Internal IDE Drive | 249.95 |
| Video | | |
| 40169 | NEW! Diamond Monster 3D 3400XL | 239.95 |
| 30490 | Mystique 4M | 189.95 |
| 39681 | NEW! STB Nitro 3D 4M | 149.95 |
| 37701 | STB Velocity 3D 4M | 199.95 |

## SUPER LOW SIMMS!

1MB SIMMS as low as $16.95 1107

| 4MB | 8MB | 16MB | 32MB |
|---|---|---|---|
| as low as $29.95 | as low as $49.95 | as low as $99.95 | as low as $199.95 |

## Hayes PC Card

*56Kbps Faxmodem!* Uncompromised Hayes quality!

$199.95

FREE software, money-saving offers!

39864

## FREE! Catalog Subscription!

CALL TODAY!

☐ MacConnection ☐ PC Connection

Please check the catalog(s) you wish to receive

(Mention source code 77PCW)

Name ____

Address ____ Apt ____

City ____ State ____ Zip ____

**10,000 HOT PRODUCTS 24 HRS A DAY!**

# 800-986-2280

www.macconnection.com

Now shop on-line with a name you can trust!

Circle 165 on reader service card

PC AD 77PCW

# USA FLEX

WINNER OF 34 BEST BUY AWARDS — Best Buy — Since 1984

**The Best Prices on Over 20,000 Computer Products**

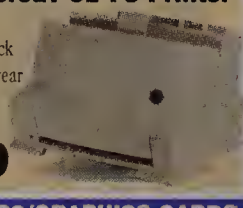
## TOSHIBA Tecra 500CS

- 120MHz Pentium Processor.
- 16MB/144MB EDO RAM
- 1.26GB HD
- 12.1" SVGA DSTN Color Display

PA1221US2A

**$1399**

## HEWLETT PACKARD HP LaserJET 5L-FS Printer



- 4ppm
- 600dpi black
- Mfr's one-year warranty

C3941B

**$389**

## US Robotics x2™ 56K Modem

US Robotics — The Intelligent Choice in Information Access

**$197.95** Internal Model

External Model ..... **$217.95**

## Microsoft Office 97

ONLY $179.95*

The world's best selling office suite, now integrates intelligent 32-bit applications with the power of the internet.

*Includes the following titles: MS Excel '97, MS Word '97, MS PowerPoint '97, and MS Outlook '97.*

*Net price after manufacturer's rebate.

## Iomega Zip Drive

NEW LOW PRICE! $149

- Small, light and portable
- Store 100MB on each 3.5" disk

## MONITORS/GRAPHICS CARDS

### NEC

M500 Multimedia (15"/13.7" VIS) ..$379
M700 Multimedia (17"/15.7" VIS) ..$749
MultiSync XV15+ (15"/13.7" VIS) ..$379
MultiSync XV17+ (17"/15.7" VIS) ..$699
MultiSync XE21 (21"/19.5" VIS) ..$1674

### VIEWSONIC

VS-15ES (15"/13.7" VIS) ..$334
VS-15GA (15"/13.7" VIS) ..$398
VS-17GS (17"/15.7" VIS) ..$398
17GS (17"/15.7" VIS) ..$649
Sonictron VS-PT770 (17"/15.7" VIS) ..$713
VS-20G (20"/18.6" VIS) ..$1114
20G (20"/18.6" VIS) ..$1199
VS-G810 (21"/19.5" VIS) ..$1511

### MAG INNOVISION

DX1595 (15"/13.7" VIS) ..$349
DX1795 (17"/15.7" VIS) ..$619
DX700T (17"/15.7" VIS) ..$689

*Monitor size refeers to CRT/Visable image size.

### PRINCETON GRAPHICS

E040 (14"/13.4" VIS*) .28dp ..$229
E050 (15"/13.8" VIS*) .28dp ..$289
E070 (17"/15.8" VIS*) .28dp ..$519
E075 (17"/15.8" VIS*) .26dp ..$639

### SONY

100SF (15"/13.7" VIS) ..$489
100SX (15"/13.7" VIS) ..$399
200SF (15"/13.7" VIS) ..$799
Multiscan 17SEII (17"/15.7" VIS) ..$976
Multiscan 20SX (20"/18.6" VIS) ..$699
Multiscan 20SFII (20"/18.6" VIS) ..$1635

### PANASONIC

PanaSync E15 (15"/13.7" VIS) ..$320
PanaSync/Pro P15 (15"/13.7" VIS) ..$390
PanaSync S17 (17"/15.7" VIS) ..$638
PanaSync P17 (17"/15.7" VIS) ..$762
PanaSync E21 (21"/19.5" VIS) ..$1405

### HERCULES

T2312EDO Terminator 3D PCI, 2MB ..$168
T2314EDO Terminator 3D PCI, 4MB ..CALL
T2212EDO Terminator 64 PCI, 2MB ..$81

### PLAY

Snappy Video Capture ..$179*

### ATI

ATI-VIDXPCI2 Video Xpression PCI, 2MB ..$115
ATI-3DXPCI2 3D Xpression PCI, 2MB ..$145
GPROTURBOPCI2 Graphics Pro Turbo, 2MB ..$219
GPROTURBOPCI4 Graphics Pro Turbo,4MB ..$312

### CREATIVE LABS

GBMA201 Graphics Blaster MA201 ..$69
GBMA202 Graphics Blaster MA202 ..$86
GBMA302 Graphics Blaster MA302 ..$129

## MODEMS/PC CARDS

### MEGAHERTZ

33.6 x2 Upgradeable with XJack ..$219.95
33.6 with XJack, Cellular capable ..$229.95
33.6 Modem 10Base-T with XJack ..$289.95
10Base-T with XJack (XJ 10 BT) ..$109.95
10Base-T (cc 10 BT) ..$109.95

### HAYES PC CARD

Optima 33.6 Fax Modem w/EZ Jack SmartCom HAY-02690 ..$239

### PRACTICAL PERIPHERALS

V56K PC-C ard, K56Flex ..$199.95
33.6 PC-Card EZ-Jack ..$135.95

*Practical 56K modems available in either x2 or K56Flex version. Must specify.*

Internal 56K x2 ..Call.
Internal 56K K56Flex ..Call.
External 56K x2 ..Call.
External 56K K56Flex ..Call.

### BOCA

Office Communicator 28.8
D1-FDVSP341 ..$136†
Boca M56 (External) K56Flex ..$165.95
Boca M56 (Internal) K56Flex ..$145.95†

### HAYES

Accura 33.6 w/SmartCom Software HAY-02758 ..$105*†
Hayes 56K K56Flex ..$179.95
Hayes 56K K56Flex ..$165.95†

### US ROBOTICS

Sportster 33.6 Internal ..$129
Sportster 33.6 Externet ..$159
Sportster 56K Internal ..$197.95
Sportster x2 56K External ..$217.95
Courier V. Everything CR-001223 ..$210†
Courier V. Everything CR-001224 ..$240

*Price after manufacturers rebate † Internal Modem

## MULTIMEDIA/CD-ROM

### NEC

MultiSpin 8Xi/8Xe ..$239/$349

### PANASONIC

Portable 4X CD-ROM Drive ..$299
Portable 8X CD-ROM Drive w/Speakers ..$399
*SPECIAL:* Portable 4X CD-ROM Drive Factory Refurbished 2 yr. Warranty ..$169

### PHILIPS

6X2 CD-Writer ..from $499*
8X SCSI CD-ROM Drive ..from $249

### CREATIVE LABS

Blaster CD 8X PnP ..$249
Discovery CD 12X ..$315
SoundBlaster Performance 8X PnP $449
SoundBlaster 16 Value IDE PnP ..$99
SoundBlaster AWE 64 PnP ..$174
SoundBlaster 32 PnP ..$139

### PINNACLE MICRO

Apex 2.6GB Optical ..$1595
4X4 CD-Writer - Internal ..$929
4X4 CD-Writer - External ..$999

### PLEXTOR

8Plex Internal w/o interface ..$349
8Plex External w/o interface ..$449
8Plex External w/ISA Card ..$499
8Plex External w/PCI Card ..$629
*NEW!* 12Plex External w/PCI Card ..Call.

### ALTEC LANSING SPEAKERS

ACS45 6W Speakers ..$79
D1-ACS51 6W Power cubes ..$75
D1-ACS53 27W ..$149
D1-ACS500 80W ..$329

### HEWLETT-PACKARD

HP SureStore CD-Writer ..$549

*Price after manufacturer's mail-in rebate. Ask your salesperson for details!*

## PRINTERS...LASER/INK JET/DOT MATRIX

### HP PRINTERS

DeskJet 340 ..$239
DeskJet 400C Printer ..$179
DeskJet 692C ..$299
DeskJet 820CXi/870 CXi ..$379/$489
DeskJet 1600C /CM Printer ..$1289/$1869
LaserJet 5L-FS ..$389
LaserJet 6P/6MP ..$719/$879
OfficeJet 330 (Printer/Fax/Copier/Scanner) ..$499
LaserJet 5SE ..$1299

### EPSON

DFX-5000+/8000 ..$1395/$2329
Stylus Color 400 ..$229
Stylus Color 600 ..$299
Stylus Color 800 ..$449
Stylus 1500 (up to 17x22) ..$799
Stylus Pro XL (720dpi Microdot, up to 13x19) ..$1499

*Postscript Interpreter avail. for Stylus Pro & Pro XL color printers.*

### BROTHER

HL-720 (Windows Only) ..$349
HL-730 (Window & DOS) ..$399
HL-760 (1200x600) ..$479
HL-1060 (10ppm, 1200x600, dual bins) ..$799
MFC-690 (thermal) ..$269
MFC-1950+ (ribbon) ..$499
MFC-4550 (laser) ..$799
MFC-6550MC (laser) ..$999
MFC-7550MC (laser) ..$1199

### OKIDATA PRINTERS

OkiPage 4W (Windows Only) ..$299
OL600e/OL610e/OL810e ..$399/$499/$699
ML320/ML321 Turbo ..$319/$449
ML590/ML591 ..$449/$609

### CANON

BJC-240 ..$179
BJC-4200 ..$229*
BJC-4550 (up to 11x17) ..$499
BJC-620 ..$399
LBP-465 (Laser) ..$359
C2500 (Fax, Scanner, Printer, Copier) ..$599

### LEXMARK

Winwriter 150C ..$185
Color Jetprinter 1020/2070 ..$145/$339
Color Jetprinter 2050 ..$249
2380/2381 Plus Dot Matrix Printer ..$315/$425
2390/2391 Plus Dot Matrix Printer ..$359/$465
4079 Plus ..$2489
4226 Dot Matrix ..$1269
4039 10 Plus ..$1069
Optra E ..$539
Optra R+/OptraRt+ ..$1249/$1479
Optra Lx+/Optra Lxn+ ..$1859/$2229
Optra C ..$5989
Optra N/Optra N w/16MB RAM ..$2679/$3379

### NEC

SuperScript 860 (laser) ..$399

*Price after manufacturer's mail-in rebate. Ask your salesperson for details!*

## DESKTOP SYSTEMS

### IBM APTIVA S SERIES

S64, P166, 16MB, 2.5GB, w/monitor: mm15/mm17 ..$2279/$2599
S66, P166, 16MB, 3.2GB, w/monitor: mm15/mm17 ..$2379/$2699
S80, P166, w/MMX 32MB, 3.2GB, w/monitor: mm15/mm17 ..$2579/$2899
S8C, P166, w/MMX 32MB, 3.1GB, w/monitor: mm15/mm17 ..$2829/$3149
S9C, P200, w/MMX 32MB, 4.2GB, w/monitor: mm15/mm17 ..$3079/$3399

*Full Line of IBM Monitors Available!*

### COMPAQ DESKPRO SERIES

DeskPro 2000, P133, 16MB, 1.26GB ..$1119
DeskPro 2000, P166, 16MB, 1.26GB ..$1319
DeskPro 4000, P133, 16MB, 1.08GB ..$1299
DeskPro 4000, P166, 32MB, 1.62GB, 8X CD-ROM ..$2099
DeskPro 6000, P166, 32MB, 2.18GB ..$2449
DeskPro 6000, Pentium Pro 200, 32MB, 2.1GB, 8X CD-ROM ..$3099

### USA FLEX SYSTEMS

The Starter Special P133, 16MB, 1.7GB, MT, 12X CD, 14" ..$1399
Family Classic, P166, 16MB, 2.5GB, MT, 12X, 15", ZIP Drive ..$1999
Multimedia Tower, P/200w/MMX, 32MB, 6.0GB, 12X, 17", FC800 ..$3699
Multimedia Classic, P166 w/MMX, 32MB, 3.0GB, MT, 12X, 17", HP 692 ..$2699
Home/Office Special, P200 w/MMX, 32MB, 3.1GB, 12X CD, MT, 17", HL720, ZIP Drive ..$3449
Business Workstations starting at ..$1199

*Custom Systems Available–Call your Flex sales representative for full details.*

### HP VECTRA 500 SERIES

510CD, 5/100 P100, 8MB, 1.28GB, 4X ..$1099
515, 5/133, P133, 8MB, 1.66GB ..$1199
515MCX, 5/100, P100, 8MB, 1.28GB, 4X, Sound, Telephony ..$1299
515MCX, 5/133, P133, 16MB, 256K, 1.6GB, 8X, Sound, Telephony ..$1599
515MCX, 5/166, P166, 16MB, 256K, 2.5GB, 8X, Sound, Telephony ..$1999

*Compaq & HP models do not include monitor unless otherwise stated.*

## SCANNERS

### EPSON

PhotoPlus Scanner ..$199
Action Scanner II ..$403
ES1000C ..$539
Flatbed Scanner 636 (Pro) ..$1846
Flatbed Scanner 636 (Artists) ..$1275
Flatbed Scanner 636 (Exec) ..$891

### MICROTEK

PageWiz ..$114
Scanmaker E3 ..$189
Scanmaker E6 ..$459
Scanmaker E6 Pro ..$599

### HEWLETT-PACKARD

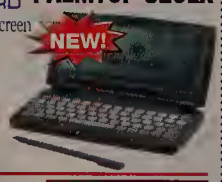
HP ScanJet 4S Scanner ..$179
HP ScanJet 5P Scanner (color/grayscale) ..$369
HP ScanJet 4C Scanner (color) ..$789

## IBM LAPTOP 380D

- 150MHz Pentium Processor
- 1.3GB Hard Drive
- 16MB RAM
- 12.1" DSTN SVGA Color Display
- 8X CD-ROM

**$2799**

## HEWLETT PACKARD PALMTOP 320LX



NEW!

- 640 x 240 Backlit Screen

4MB **$699**

300LX w/ 2MB **$499**

## COMPAQ DESKPRO 2000

While supplies last.

- 133MHz Pentium Processor
- 1.2GB Hard Drive
- 16MB RAM/128MB max.

**$1199**

Monitor sold separately.

## Canon BJC-4200P

With Photo Kit

- Up to 7200dpi
- Up to 5ppm

**$249***

*After manufacturer's rebate.

## NOTEBOOK COMPUTERS

### TOSHIBA

Satellite 200CDS, P100, 11.3"DS, 810MB ..$1549
Satellite Pro 420CDT, P100, 11.3" Act, 1.28GB ..$1999
Satellite Pro T430CDS, P120, 11.3" SVGA DSTN, 1.2GB ..$1969
Satellite Pro 430CDT, P120, 11.3" TFT, 1.2GB ..$2599
Tecra 500CS, P120, 12.1" DS, 1.3GB ..$1399
Tecra 500CDT, P120, 12.1" Act., 1.3GB ..$2899
Tecra 510CDT, P133, 12.1" Act., 2.0GB ..$3399
Tecra 730CDT, P150, 12.1" Act., 2.0GB ..$4999
Tecra 740CDT, P166 w/MMX,13.3" Act., 2.0GB ..$6199
Portege 650CT, P133, 1.3GB ..$3599
Portege 660CDT 11.3 Act, P150, 1.35GB, 10X CD ..$4599

### OLIVETTI Echos

P100C, P100, 11.3" DS, 6X CD-ROM, 1.3GB ..$1399
P100E, P100, 10.4" Act., 6X CD-ROM, 1.3GB ..$1599
P120E, P120, 11.3" Act., 6X CD-ROM, 1.3GB ..$1999
P133, 11.8" Act., 6X CD-ROM, 1.3 GB ..$2199

### HITACHI Mx & E Series

MX150TMMX, P150 w/MMX, 12.1" Act., 16MB, 2GB, 8X CD-ROM ..$4399
E133DN, P133, 11.3"DS., 16MB, 1GB ..$1399
E133T, P133, 11.3"Act., 16MB, 1GB ..$1999

### HEWLETT-PACKARD Omnibook 5500

5500CS, P100, 16MB, 1.3GB, 11.3" DS ..$1679
5500CT, P120, 16MB, 1.35GB, 10.4" Act., ..$2639
5500CT, P133, 16MB, 2.0GB, 12.1" Act. ..$3169
5500CT, P133, 16MB, 1.35GB, 12.1" Act. ..$3429
800CS, P100, 16MB, 810MB, 10" DS ..$2399
800CT, P133, 16MB, 1.35GB, 10.4" Act. ..$3349

### IBM ThinkPad

365XD, P120, 10.4" DS, 810MB, 4XCD ..$1869
365X, P133, 11.3" Act., 1.0GB ..$1699
365X, P120, 10.4"Act., 810MB ..$1499
760EL, P133, 12.1" Act., 2.18GB ..$3999
760E, P150, 12.1" Act., 1.26GB ..$4349
760ED, P133, 12.1" Act., 2.1GB, 6XCD ..$4599

### TEXAS INSTRUMENTS

TM 6020, P120, 11.3" Act., 8MB, 1.08GB ..$2199
TM 6030, P133, 12.1" Act., 16MB, 1.35GB ..$2499
TM 6050, P150, 12.1" Act., 16MB, 1.35GB ..$3299
TM 7060, P166MMX, 12.1" TFT, 32MB, 2.0GB ..$4499
TM 6160, P166MMX, 12.1" TFT, 32MB, 2.0GB ..$4999
610CD, P150, 11.3"DSTN, 16MB, 1.4GB, 10X CD ..$1999
Extensa 900 P133, 12.1" DS, 16MB, 1.35GB ..$2299
Extensa 900T P133, 11.3" Act., 16MB, 1.35GB ..$2599

CLN1-P

TARGUS

INSTANT $20 off

This Targus leather bag with purchase of any notebook computer

660CD, P166MMX, 12.1"DSTN, 16MB, 1.35GB, 10X CD ..$2799
900CDT, P133, 11.3" Act., 16MB, 1.35GB ..$3099
TM6160, P166MMX, 12.1" TFT, 32MB, 2GB, 10X CD ..$4999
TM7060, P166MMX, 12.1" TFT, 32MB, 2GB, 10X CD ..$4499

### COMPAQ Armada & LTE Series

Armada 1120T, P100, 10.4"Act, 810MB ..$1299
Armada 4120, P120, 11.3"DS, 1.08GB ..$1999
Armada 4120T, P120, 11.8"Act, 1.08GB ..$1299
Armada 4130T, P100, 11.8"Act, 1.08GB ..$2499
LTE 5250, P120, 10.4"Act, 810MB ..$2699
LTE 5280, P120, 11.3"Act, 1.3GB ..$3399
LTE 5300, P133, 12.1"Act, 1.3GB ..$3899
LTE 5380, P133, 12.1"Act, 2.16GB ..$4199


USA FLEX

471 Brighton Drive
Bloomingdale, IL 60108
Phone: 630-893-0345
Fax: 630-351-7204
24 hours Mon.-Fri.
9AM-4PM(CT) Sat. & Sun.


Prices subject to change without notice. Not responsible for typographical errors.

**1-800-876-5606**

Code # PC0797 Please reference this code when ordering.

Visit our internet site at: http://www.USAFLEX.com

Federal Express® Delivery Service Available — FedEx

No Surcharge On These Credit Cards — MasterCard VISA DISCOVER

# SAVE UP TO $1150 ON SELECTED NOTEBOOKS!

**TAP** TECHNOLOGY ASSURANCE PLAN

PCs Compleat's **Technology Assurance Plans** for systems and peripherals provide coverage above and beyond that offered by the manufacturer. Call Today!

**PCs COMPLEAT®**
A COMPUSA® COMPANY
**800-448-1563**

## TOSHIBA

### Satellite Pro 420 & 430

- 100 MHz Pentium Processor
- 8MB RAM
- 772MB Hard Drive
- 11.3" Dual Scan Screen
- 6X CD-ROM Drive

Satellite Pro 420CDS
$1599.00
Price Break -200.00
$1399.00
3-Year TAP Warranty ..... $99.97
5-Year TAP Warranty ..... $299.97

| Model | CPU | Screen | RAM/HD | CD | Price |
|---|---|---|---|---|---|
| 420CDS | 100MHz | 11.3" Dual Scan | 8/772MB | 6X | $1399* |
| 430CDS | 120MHz | 11.3" Dual Scan | 16MB/1.2GB | 10X | 1969 |
| 420CDT | 100MHz | 11.3" Active | 8MB/1.2GB | 6X | 2399 |
| 430CDT | 120MHz | 11.3" Active | 16MB/1.2GB | 10X | 2619 |

*Price after instant rebate.

Satellite Pro 420CDS

### Tecra 500

- 120 MHz processors
- 10X CD-ROM drive
- 16MB EDO RAM memory
- 12.1" Active Matrix displays

Tecra 500CDT
$3449.00
Price Break -500.00
Instant Rebate -200.00
$2749.00
3-Year TAP Warranty ..... $99.97
5-Year TAP Warranty ..... $299.97

| Model | CPU | Screen | RAM/HD | CD | Price |
|---|---|---|---|---|---|
| 500CS | 120MHz | 12.1" Dual Scan | 16MB/1.3GB | Opt. | $1799 |
| 500CDT | 120MHz | 12.1" Active | 16MB/1.3GB | 10X | 2749* |

*Price after instant rebate and price break.

Tecra 500CDT

## TOSHIBA

SAVE $1150
12.1" ACTIVE MATRIX

Tecra 730XCDT

### Tecra 730

- 150 MHz processor
- 10X CD-ROM drive
- 16MB EDO RAM memory
- 12.1" Active Matrix display

CHECK OUT THE SAVINGS!

| Model | CPU | Screen | RAM/HD | CD | Price |
|---|---|---|---|---|---|
| 730XCDT | 150MHz | 12.1" Active | 16MB/2.1GB | 10X | $4449* |

*Price after instant rebate and price break.

Tecra 730X CDT
$5599.00
Price Break -900.00
Instant Rebate -250.00
$4449.00
3-Year TAP Warranty ..... $99.97
5-Year TAP Warranty ..... $299.97

## COMPAQ

NEW!
Presario

### Presario Notebook

- 10X CD-ROM drive
- 128-bit PCI graphics
- Built-in 33.6 fax modem
- Integrated PremierSound audio
- MS Works, Quicken and more!

Presario 1070
$2699.00
Price Break -200.00
$2499.00
3-Year TAP Warranty .... $259.97
5-Year TAP Warranty .... $399.97

| Model | CPU | Screen | RAM/HD | CD | Price |
|---|---|---|---|---|---|
| 1070 | 133MHz | 12.1" Dual Scan | 16MB/1.1GB | 10X | $2499* |
| 1080 | 166MHz MMX | 12.1" Active | 16MB/1.44GB | 10X | 4249 |

*Price after price break.

## HITACHI MOBILIZED COMPUTING

BUILT-IN 10BASET LAN ADAPTER

### Hitachi M™ & Mx™

- Integrated 10BaseT Ethernet card
- Built-in cellular data/fax/modem
- 5-year warranty
- Up to 8X CD-ROM drives

M133T
$4999.00
Instant Rebate -600.00
$4399.00
5-Year TAP Warranty ..... $459.97

| Model | CPU | Screen | RAM/HD | CD | Price |
|---|---|---|---|---|---|
| MX133T | 133MHz | 12.1" Active | 16MB/1.35GB | 8X | $4599* |
| MMX166T | 166MHz MMX | 12.1" Active | 16MB/2.1GB | 8X | 4799 |

*Price after instant rebate.

Mx™ Series Notebook

## digital™

### HiNote Ultra II

- Only 1.2" thick and 4.0 lbs!
- Up to 150MHz Pentium processors
- 11.3" Super VGA, Active Matrix displays
- 16MB of RAM memory

HiNote Ultra II
$4499.00
Instant Rebate -200.00
$4299.00
3-Year TAP Warranty ..... $99.97
5-Year TAP Warranty ..... $599.97

| Model | CPU | Screen | RAM/HD | CD | Price |
|---|---|---|---|---|---|
| Ultra II | 133MHz | 11.3" Active | 16MB/1.35GB | Opt. | $4299* |
| Ultra II | 150MHz | 11.3" Active | 16MB/1.44G | Opt. | 4799 |

*Price after instant rebate.

Ultra II with external Floppy Dock

## FUJITSU

FUJITSU PC CORPORATION

LifeBook™ 600 Notebook

### LifeBook™ 600 Notebook

- 133 and 150 MHz Pentium Processors
- Only 1.2" thick and 4.2 lbs.
- 12.1" Active Matrix displays
- Integrated 28.8 fax modem

LifeBook™ 635T
$3999.00
Price Break -500.00
$3499.00
3-Year TAP Warranty ..... $99.97
5-Year TAP Warranty ..... $499.97

| Model | CPU | Screen | RAM/HD | CD | Price |
|---|---|---|---|---|---|
| 635T | 133MHz | 12.1" Active | 16MB/1.3GB | Opt | $3499* |
| 655Tx | 150MHz | 12.1" Active | 16MB/1.3GB | Opt | 4299 |

*Price after instant rebate and price break.

Additional models are available with Windows for Workgroups or Windows 95.

## IBM®

IBM Business Partner

TECHNICAL EXCELLENCE PC MAGAZINE

Super Light at 4.0 lbs. and 1.2" thick!

ThinkPad® 560

### ThinkPad® 560

- Only 4.1 lbs. and 1.2" thick!
- Up to 133MHz Pentium processors
- 11.3" & 12.1" SVGA displays
- 16-bit SoundBlaster compatible audio
- External floppy drive reduces weight
- EDO RAM memory enhances performance
- Infrared transceiver for wireless communication

| Model | CPU | Screen | RAM/HD | CD | Price |
|---|---|---|---|---|---|
| 560 | 100MHz | 11.3" Dual Scan | 8/810MB | Opt. | $1599* |
| 560 | 133MHz | 11.3" Dual Scan | 8MB/2.1GB | Opt. | 2499 |
| 560 | 133MHz | 12.1" Active | 8MB/1.1GB | Opt. | 4199 |
| 560 | 133MHz | 12.1" Active | 8MB/2.1GB | Opt. | 4399 |

*Price after instant rebate and price break.

ThinkPad® 560
$2449.00
Price Break -300.00
Instant Rebate -550.00
$1599.00
3-Year TAP Warranty ..... $99.97
5-Year TAP Warranty ..... $499.97

**More Brand Names, Peripherals and Software available. If you don't see it, CALL!**

International: 508-624-6400
Email: sales@pcscompleat.com
Visit us at www.compusa.com
Open 7am-Midnight weekdays. 8am–8pm weekends and holidays.

**800-448-1563**

PCs COMPLEAT

A COMPUSA COMPANY

800-448-1563

# COMPLEAT MULTIMEDIA

We Carry Over 30,000 Products!
Call Today for your FREE PRODUCT GUIDE!

THE LATEST PROCESSOR IN THE INTEL FAMILY BRINGS YOU AMAZING MEDIA ENHANCEMENT TECHNOLOGY!

# 233MHz Pentium Processor with MMX Technology!

## IBM®

IBM Business Partner

### Aptiva Multimedia

- Place tower up to 6 ft. away
- 33.6 data/fax/voice modem with telephony
- Pentium MMX™ technology
- Integrated audio on optional monitor
- Vivid graphics with Total Image 3D™
- 3D stereo sound with Theater Sound™

| Model | CPU | RAM/HD | CD | Price |
|---|---|---|---|---|
| S3E | 233MHz MMX | 32MB/4.2GB | 24X MAX | $2599 |
| C8E | 166MHz MMX | 32MB/3.2GB | 16X | 1999 |
| C9E | 200MHz MMX | 32MB/3.2GB | 16X | 2099 |
| S8C | 166MHz MMX | 32MB/3.2GB | 16X | 1999 |
| S9C | 200MHz MMX | 32MB/4.2 GB | 16X | 2599 |

**Aptiva S Series Monitors**

| Model | Size | View | Resolution | Price |
|---|---|---|---|---|
| G50 | 15" | 13.4" | 1024 x 768 | $399 |
| G70 | 17" | 15.7" | 1280 x 1024 | 739 |

*Monitors priced separately*

MMX intel inside pentium

*IBM Aptiva S Multimedia*

Unique MediaConsole™ puts your CD-ROM, floppy and controls at your fingertips

Aptiva S3E
$2599
3-Year TAP Warranty..... $99.97
5-Year TAP Warranty..... $229.97

## Packard Bell.

### Packard Bell D1000 Multimedia

- 133MHz Pentium processor
- 8X CD-ROM drives
- 33.6/14.4 data/fax modem
- 16MB EDO RAM memory
- 1.2GB Hard Drive

Packard Bell Multimedia
$999.00
Instant Rebate -200.00
$799.00
3-Year TAP Warranty..... $99.97
5-Year TAP Warranty.....149.97

** Price after instant rebate.*

| Model | CPU | RAM/HD | CD | Price |
|---|---|---|---|---|
| D1000 | 133MHz | 16MB/1.2GB | 8X | $ 799.00* |
| D141 | 133MHz | 16MB/1.7GB | 16X | 999.00 |
| L190 | 200MHz | 16MB/2.0GB | 16X | 1399.99 |
| 2240X | 200MHz MMX | 32MB/3.2GB | 16X | 1899.99 |

**Packard Bell Monitor**

| Model | Size | View | Resolution | Price |
|---|---|---|---|---|
| Monitor | 14" | 13.25" | 1024x768 | $ 299.00 |

*Monitors priced separately*

## NEC

### Ready 9704 Multimedia

- 200MHz Pentium processor
- 16X CD-ROM drives
- 56K data/fax modem with speaker phone
- 24MB EDO RAM memory
- 3.2GB Hard Drive

Ready 9704
$1599
3-Year TAP Warranty..... $99.97
5-Year TAP Warranty... $149.97

| Model | CPU | RAM/HD | CD | Price |
|---|---|---|---|---|
| 9704 | 200MHz | 24MB/3.2GB | 16X | $1599.00 |
| 9710 | 166MHz MMX | 16MB/2.1GB | 8X | 1799.00 |
| 9712 | 166MHz MMX | 32MB/3.2GB | 16X | 1999.00 |

**NEC Monitors**

| Model | Size | View | Resolution | Price |
|---|---|---|---|---|
| XV15+ | 15" | 13.8" | 1280x1024 | $380 |
| XV17+ | 17" | 15.6" | 1280x1024 | 729 |

*Monitors priced separately*

## HEWLETT PACKARD Pavilion

*HP Pavilion Multimedia*

### Pavilion 7420 Multimedia

- 166MHz MMX Pentium processor
- 16X CD-ROM drives
- 33.6/14.4 data/fax modem with speaker phone
- 32MB EDO RAM memory
- 3D stereo audio and graphics

| Model | CPU | RAM/HD | CD | Price |
|---|---|---|---|---|
| 7420 | 166MHz MMX | 32MB/2.5GB | 16X | $1699 |
| 7125 | 133MHz | 16MB/1.6GB | 6X | 899* |
| 7320 | 166MHz MMX | 16MB/2.1GB | 16X | 1599 |
| 7360 | 200MHz MMX | 32MB/3.BGB | 16X | 2299 |

* Factory Refurbished

**Pavilion Monitors**

| Model | Size | View | Resolution | Price |
|---|---|---|---|---|
| Pavilion | 15" | 13.8" | 1024 x 768 | $449 |
| Pavilion | 17" | 15.7" | 1024 x 768 | 749 |

*Monitors priced separately*

Pavilion 7420
$1699
3-Year TAP Warranty..... $99.97
5-Year TAP Warranty... $149.97

MMX intel inside pentium

## TOSHIBA

*Toshiba Infinia Multimedia*

InTouch™ Module. Jump from CD to TV to radio to answering machine, each with the touch of a button. Standard on select models.

** Price after instant rebate.*

Infinia 7201
$1999.00
Instant Rebate -100.00
$1899.00
3-Year TAP Warranty..... $99.97
5-Year TAP Warranty.....149.99

### Infinia Multimedia

- 200MHz MMX Pentium processors
- 12X CD-ROM drives
- 33.6/14.4 full duplex data/fax modem
- 3D Stereo Sound
- MPEG 1 Full-Motion Video
- Internet Ready
- Plug and Play Compatible

PC MAGAZINE EDITORS' CHOICE

| Model | CPU | RAM/HD | CD | Price |
|---|---|---|---|---|
| 7160 | 166MHz | 16MB/1.9GB | BX | $ 999 |
| 7130 | 133MHz | 16MB/1.6GB | BX | 1299 |
| 7160 | 166MHz | 16MB/1.9GB | BX | 1599 |
| 7201 | 200MHz MMX | 32MB/3.0GB | 12X | 1899* |
| 7161 | 166MHz MMX | 32MB/2.4GB | 12X | 1999 |
| 7200 | 200MHz | 16MB/3.0GB | BX | 2199 |

Factory Refurbished

**Infinia Monitors** *Monitors priced separately*

| Model | Size | View | Resolution | Price |
|---|---|---|---|---|
| Infinia | 15" | 13.7B" | 1280 x 1024 | $459 |
| Infinia | 17" | 16.23" | 1280 x 1024 | 759 |

© 1997 PCs Compleat. All prices and specifications subject to change and do not include shipping. All products or brand names are trademarks of their respective companies. PCs Compleat, 34 St. Martin Drive, Marlborough, MA 01752-3021. Phone (508) 624-6400. Not responsible for typographical errors. All trademarks and registered trademarks are the sole property of their respective owners. Lowest price guarantee applies to system purchases only.

ONLY at PCs COMPLEAT ✓ Low Price Guarantee ✓ Money Back Guarantee ✓ Free Tech Support ✓ Free Software Installation ✓ Free Configuration

Circle 129 on reader service card

# ACCESSORIES AND UPGRADES

**TAP** TECHNOLOGY ASSURANCE PLAN

PCs Compleat's **Technology Assurance Plans** for systems and peripherals provide coverage above and beyond that offered by the manufacturer. Call Today!

PCs COMPLEAT®
A COMPUSA® COMPANY
800-448-1563

HEWLETT PACKARD

Enjoy HP print quality anywhere and anytime!

## HP DeskJet 340 Portable Printer

- Compact footprint – convenient portability that fits in your briefcase
- 600X 300 dpi black with HP Resolution Enhancement
- 300X300 dpi color
- Fast 3 ppm black printing

$289.99

NEC

Premium quality laser printing at an incredible price!

## 560 Plus Laser Printer

- Compact footprint – fits into even the tightest work environment
- 600x600 dpi with NEC Sharp Edge Technology
- Fast 6 ppm printing
- 150-sheet paper tray

Great Low Price!

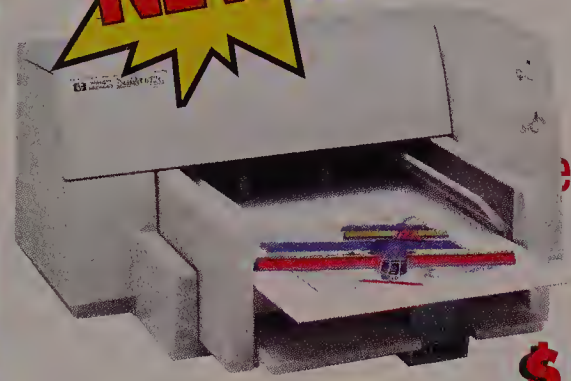
$349.00
Instant Rebate -50.00
$299.00

HEWLETT PACKARD

## HP DeskJet 672C Color Inkjet Printer

- 600x600 dpi 4 ppmblack printing
- 600x300 dpi 1.5 ppm color printing
- ColorSmart Technology
- Windows® 95 compatible

NEW!



Quality color printing at an exceptional price!

ONLY $199.99

HEWLETT PACKARD

NEW!

## HP PhotoSmart Digital Camera

Features 2 MB memory, 640 x 480 photo resolution, stores up to 32 photos, Microsoft Picture It and a built-in flash.
C5340A

$399.99

Maxtor

FREE* 8MB RAM with purchase of a Maxtor 2.1 Gig Hard Drive!

## Maxtor 2.1 GIG IDE Hard Drive Kit

Proven performance with this 3½" IDE/AT enhanced interface. Quick and easy installation, fast data transfer rate and guaranteed compatibility.
K0182100A

* 2 - 4MB SIMMs

$249.95
MFR. Mail-In Rebate -30.00
$219.95

## Iomega® Ditto Drives

iomega

$50 Mail-In Rebate Offer

AS LOW AS $99.95*

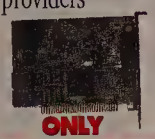
**Ditto™ 2.0GB Drives**
*External – # 10333 – 149.95**
*Internal – # 10334 – 99.95**
**After manufacturer's rebate. Offer expires 7/31/97.*

## 56K Desktop Data/Fax Modem

APEX DATA

- 56K high-speed access to the Internet and on-line services.
- Maximum compatibility with Internet service equipment providers and other modem users.

ST56141DNAMSR



Lowest Price 56K!

ONLY $129.95

Megahertz

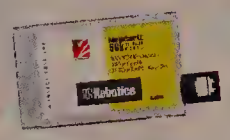
NEW!

## 56K PCMCIA Notebook Fax/Modem

- 14.4 Fax and 56K Modem
- Includes FaxWorks Data 3.0 for Windows

XJ1560

$25.00 OFF WinFoxPRO 4.0 or
$50.00 OFF Symontec pcANYWHERE
with purchase of 56K PCMCIA fax/Modem!



$239.00

## 8X CD-ROM Kit

- 185ms access time
- 1200KB/Sec data transfer rate
- Front panel play with skip, stop and eject buttons

HI YAL

Includes IDE Controller card, manual, driver, cables and 1 Year warranty!

$79.00

*8X CD-ROM Drive PCS8A-00R2 – $79.00**
*12X CD-ROM Drive PCS12A-00R2 – 99.99**
**Price after Instant Rebate.*

*# PCS8A-00R2*

## NEW! DVD CD-ROM

CREATIVE
CREATIVE LABS, INC.

- Transfers DVD data at 1,350 KB/sec and CD-ROM Data at 900 KB/sec
- Includes MPEG-2/Dolby Digital Decoder
- Integrated Digital Audio Playback

Cutting Edge Technology!

AS LOW AS $499.00

*#5000001032*

## Etherlink III PCMCIA Network Adapter

3Com

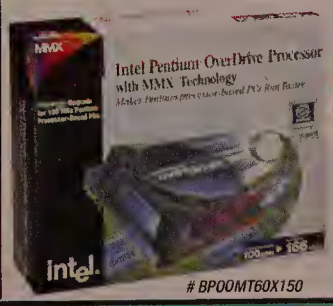
- Full-duplex operation
- Autolink software for quick and easy installation
- Draws less than 50 milliamps of power

Powerful and reliable mobile connectivity solutions!

$125.00

| | | |
|---|---|---|
| Etherlink III 10BaseT | 3C589D-TP | $ 125.00 |
| Etherlink III 10BaseT/2 | 3C589D-COMBO | 165.00 |

## NEW! Intel MMX Chip Upgrades Are Here




*# BPOOMT60X150*

Includes POD the Hot New MMX game! Exclusive to PCs Compleat!

$399.00

Upgrade your 75MHz Pentium Processor to 125MHz MMX or your 90MHz to a 150MHz MMX.

*125MHz MMX/150MHz MMX # BPODMT60X150 – $399.00*
*166MHz MMX # BPODMT60X166 – 499.00*

Evergreen Technologies

BEST SELLER!

## 486 to 586 Processor Upgrade

- Upgrade your 486SX or DX to a 586
- Triple or Quadruple your original CPU clock speed
- 16K of Level 1 Write-Back Cache 248

ONLY $109.00

800-448-1563

International: 508-624-6400
Email: sales@pcscompleat.com
Visit us at www.compusa.com
Open 7am–Midnight weekdays. 8am–8pm weekends and holidays.

More Brand Names, Peripherals and Software available. If you don't see it, CALL!

PCs COMPLEAT

A COMPUSA COMPANY

800-448-1563

# POWER BUYS

## MEMORY BLOWOUT!

**8MB SIMM Memory Upgrade**
2x32pin non-parity
$49.99
# 32400705-CS

**16MB SIMM Memory Upgrade**
4x32, 72pin non-parity
$89.99
# 32400705-CS

**32MB SIMM Memory Upgrade**
8x32, 72pin non-parity
$179.99
# 32800705-16-CS

## 17" .28 Color Monitor (15.8" Viewable Image Size)

KDS

- 1024 x 768 non-interlaced resolution
- Plug and Play compatible
- Energy Star Universal power supply
- Digital on-screen controls

# KD-1730

$499.00
Instant Rebate -50.00
$449.00

## SONY VAIO Multimedia

- 200 MHz Pentium
- Over 30 Software Titles
- 3D, Full Screen Graphics

$1499.00
Instant Rebate -100.00
$1399.00*

Monitors sold separately.

| | | |
|---|---|---|
| Pentium 200, 32MB, 2.5GB, 8X, 28.8 | PCV-90 | $1399 |
| 15" Monitor with speakers & mic, .25mm | CPD-100VS | 489 |

## Microsoft Internet Explorer Starter Kit

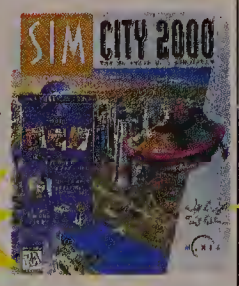
Everything you need to get started on the Internet, easily. Includes one free month of unlimited time on the Internet and a step-by-step reference card.
*WINDOWS® CD # 509-00077*

$14.99
MFR. Mail-In Rebate -10.00
$4.99

## SimCity 2000 Special Edition

MAXIS

The ultimate compilation of SimCity 2000 products all on one CD! Features over 200 brand-new buildings from the 1900's to the space age and beyond.
*WINDOWS® 95/DOS CD # 1260650001*

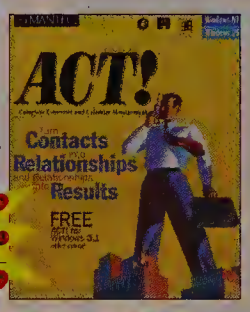



$34.99
MFR. Mail-In Rebate -20.00
$14.99

## Act! 3.0

SYMANTEC.

Turn contacts into relationships and relationships into revenue with the complete customer and calendar manager.
*WINDOWS® 95/NT CD # 06-00-0496*
**Proof of ownership required to receive rebate.*

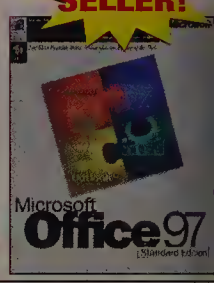



$159.99
MFR. Mail-In Upgrade Rebate* -100.00
$59.99

## Microsoft Office 97 Upgrade

BEST SELLER!

Get organized and connected with the world's most popular office suite. Features Excel 97, Word 97, PowerPoint 97 and Outlook 97.
*WINDDWS® 95 CD # 021-00703*




$219.00

## US Robotics — 33.6/14.4 v.34 Internal Data/Fax Modem

The Intelligent Choice in Information Access

- 33.6 Kbps download speed
- Everything you need to get online!

# 000840-0

$139.00
MFR. Mail-In Rebate -40.00
$99.00

## Evergreen Technologies — Upgrade your Notebook processor to a 586/133MHz!

## Notebook Upgrade

Upgrade your notebook computer to a 586/133MHz processor. All you have to do is call Fed Ex and a week later you'll be running on the cutting edge. Your manufacturer's warranty will still be valid and we'll even provide the box to protect your notebook during shipping.
# 90-X50A-C2

90-X50A-C21 Week Upgrade Service .....499.00
90-X50A-C13 Day Upgrade Service .....549.00

NEW TECHNOLOGY!

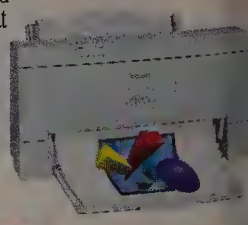
$499.00

## BJC-4100 Color Printer

Canon

- Office quality color and black/white printing at 720 x 360 dpi
- 7 TrueType™ fonts
- 1-Year Warranty and toll-free tech supoport

# Q30-1750-USI-FR



$168.00

FR

## Microsoft IntelliMouse

Combine the traditional left and right mouse buttons with an innovative wheel that puts the power to zoom and scroll right at your fingertips.
# 365-00002

BEST SELLER!

$69.00

## Microsoft Natural Keyboard for Windows® 95

- Ergonomic design
- IntelliType software for easy access to Windows® 95
- 20 new shortcut commands

# 2867051V100

$89.00

## Targus — Notepac Notebook Carrying Case

- Fully padded with adjustable divider
- Various pockets for all your accessories
- Detachable shoulder strap

# CN01

$39.00

Leather Notebook Case # CLN1 – $99.99

## PHILIPS — Velo 4MB Handheld PC with Docking Station

- 19.2Kbps Data/Fax modem
- Backlit touch-screen display
- Windows CE, Word, Excel, and Pocket Internet
- Includes fax and e-mail capabilities

# VC010202-US

NEW!

$739.00

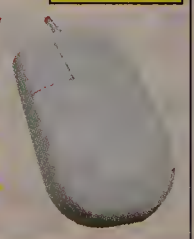
## FREE AFTER MANUFACTURER'S MAIL-IN REBATE!

### 3-Button PS/2 Mouse

MOUSE SYSTEMS

- Comfortable design
- Windows® 95/3.1/NT compability

# 904213-001



$10.00
MFR. Mail-In Rebate -10.00
$0.00!

Limit: 1 per Customer

### 2120 Tape Cartridges, 2-Pack

SONY

$14.00
MFR. Mail-In Rebate -14.00
$0.00!

Certified to meet or exceed industry standards.
# 2Q021200/PKSM

Limit: 1 per Customer

### Rainbow Colored Diskettes with Storage Box, 40-Pack

MEMOREX

$20.00
MFR. Mail-In Rebate -20.00
$0.00!

# 3202-1750R

Limit: 1 per Customer

### Fast Parallel I/O

SIIG — SIIGnificantly Better

Upgrade your parallel port with a high-speed IEEE 1284 bi-directional port.
# JJ-A0-1E12

$30.00
MFR. Mail-In Rebate -30.00
$0.00!

Limit: 1 per Customer

800-448-1563

International: 508-624-6400
Email: sales@pcscompleat.com
Visit us at www.compusa.com
Open 7am-Midnight weekdays. 8am–8pm weekends and holidays.

More Brand Names, Peripherals and Software available. If you don't see it, CALL!

Circle 129 on reader service card

MIDWEST COMPUTER WORKS

# Where Corporate America Shops!

✓ Knowledgeable Sales Staff ✓ Fast Delivery ✓ Quality Top Name Brands ✓ Technical Support

MEMORY $6.50 per MB

## EXPLODE INTO SAVINGS WITH THESE 4TH OF JULY SPECIALS!

# YOUR COMPLETE COMPUTER SOURCE!

### TOSHIBA Tecra 740CDT

- Pentium 166MHz MMX Processor
- 13.3" Active Color Display
- 16MB EDO RAM, 2GB HDD
- 33.6Kbps Voice/Data/Fax Modem
- 10X CD-ROM Drive
- 16-bit Sound Blaster Pro Compatible Sound System w/ .WAV & MIDI
- Noteworthy Business Video Phone
- 64-bit BitBLT Graphic Accelerator
- PC Card Slots, 2 Type II or 1 Type III
- 3 Year U.S./ International Limited Warranty

$6279 MMX

Video Conferencing is Here!

Brand Name Reliability, Unbelievable Low Price!

### IBM ThinkPad 760ED

Portable MPEG2 Playback!

$4499

### AMS Tech Computers & Peripherals — TravelPro 2010CX

- Pentium 166MHz MMX Processor
- 13.3" XGA Active Color Display
- 32MB EDO RAM, 2MB VRAM
- 2.1GB IDE HDD, Fast Infrared Port
- 33.6Kbps Voice/Data/Fax Modem
- 10X CD-ROM Drive
- 16-bit "REAL SOUND" Wave Table Synthesis
- Built-in Video Capture, Zoomed Video Supp
- Type III PC Card Slot
- 3 Year Limited Warranty

MMX $4545

13.3" Display

THE NOTEBOOKS YOU WANT AT THE PRICES YOU NEED!

### US Robotics

Dular-capable PC Card Fax Modem (XJ4336)

$229

.34 (33.6Kbps)
.4Kbps Send/Receive
Megahertz XJACK connector to ct to standard phone line
D/Telephone Answering Machine Features
appable, Auto Install
.ine Guard for power protection
il Cellular Cable

### AXONIX ProMedia 10XR CD-ROM Drive

Ten Speed PCMCIA

- 1.5MB/sec. Data Transfer Rate
- 256K Buffer
- Type II PC CardInterface, Opt. Parallel
- 50,000 power-on Hours
- Rugged and Durable
- No Batteries or A/C Power Necessary
- Lightweight, 20 oz.
- 1-year Warranty

10X

$379

### US Robotics X2 56Kbps modem TECHNOLOGY

### Sportster 56K Ext. Faxmodem

Sportster 56K allows Internet/Online users to download information from x2-capable service providers at up to 56Kbps while uploading information (like web addresses) at up to 33.6 Kbps.

- x2 Technology for up to 56Kbps Internet download capability, plus 28.8 and 33.6 Kbps send and receive
- Fax: V.17 Group III 14,400 & 9600bps send/receive fax
- Maximum Throughput: 115.2Kbps with compression
- Automatically selects x2 or V.34/33.6Kbps
- Universal Compatibility down to 300bps
- 5 Year Limited Warranty

$219

### Novell. IntranetWare™ For Small Business

It's easy to install and configure with little or no training. This server software features Internet access plus anytime/anywhere network access for networks 25 users or less. It includes on-line help via Netscape Navigator and can even be remotely managed by a network technician.

5-User Server Version

$609

### MICROTEK

Better Images Through Innovation.

PC MAGAZINE EDITORS' CHOICE

### ScanMaker E6 Scanner

30-Bit Single Pass Color Scanner

- 600x12000dpi Optical (8.5"x13.5" Scanning Area)
- Ulead PhotoImpact SE, OCR Software and more
- Adpatec SCSI II Interface Card

$319 30-Bit Color

BEST BUY!

### ADI America Duo Multimedia Display

- 17" (16" Viewable) Flat Square Tube, Dark-tinted Display
- 1280x1024 @ 60Hz Resolution
- .28 Trio Dot Pitch, Anti-glare/Anti-static Coating
- DuoSurround DuoDome Stereo Speaker System
- Video, Audio and Headphone Input Ports
- On-Screen Controls, Energy Compliant

FREE Duo Keyboard, ErgoPad and Mouse!

New! $595

### UMAX Astra 600S Scanner

- 300x600dpi Optical, 4800x4800dpi Interpolated
- Presto PageManager, VistaScan Color Software
- 1-pass Cold Cathode Lamp Technology
- SCSI II interface

30-Bit Color!

$245

Graphics for professionals

### APC Back-UPS Office

UPS - ALL IN ONE! 25,000 Guarantee

MAIL-IN REBATE Order Now & SAVE $30. Expires 8/30/97

- Full-time Surge Suppression, Site-wiring Protection
- Internet Ready Fax/Modem Protection
- 10 Min. of Battery Backup

~~$199~~ CALL for best price!

YOUR APC HEADQUARTERS!

### TOSHIBA Satellite 200CDS

PRICE REDUCTION!

FREE CASE, MODEM, MICROSOFT OFFICE BOOKSHELF 95 AND MORE!

- Pentium 100MHz Processor
- 11.3" Dual Scan Display
- 8MB EDO RAM, B10MB HD
- Integrated 6X CD-ROM Drive
- PCMCIA 28.8Kbps Modem
- Noteworthy Backpack Case
- Microsoft Office Pro 95 v7.0 and Bookshelf 95 Software
- Accupoint Pointing Device
- 1-Year Limited Warranty

$1523

### NOTEBOOKS

**AMS**
5CT P-120 1.3G 16M 12.1" TFT ....2599
5C P-133 1.2G 16M 10X 12.1" DS/TFT....1999/2649
6CT P-133 1.3G 16M 12.1" DS....2439
55CT MMXP-150 1.3G 16M 12.1" TFT 10X....3295
55CT MMXP-166 1.3G 16M 12.1" TFT 10X....3655
6C MMXP-166 2.1G 16M 12.1" DS/TFT....2799/3399
00CX P-150 2.1G 16M 13.3" TFT 33.6....3919
0CX MMX-P166 2.1G 32M 13.3" TFT 33.6....4545
0CX MMX-P200 2.5G 32M 13.3" TFT 33.6....4899

**AST**
0 P-133 1.2G 8M 11.3" SVGA TFT 4X....3582

**COMPAQ**
1T P-133 1.4G 16M 12.1" TFT....3429
150 2.1G 32M 12.1" TFT....4289

**OPS**
P-150 2.1G 16M 12.1" TFT 10X....3499
X MMXP-166 2.1G 16M 12.1" TFT 10X....3739

**HITACHI**
33 1G 16M 11.3" DS....1339
35G 16M 12.1" TFT 8xCD 33.6....2989

**IBM**
810M 8M 10.4" TFT....1299
-133 2.1GB 16M 12.1" TFT CD....4439
MXP-166 3GB 32M 12.1" XGA 8X....6299

**NEC**
P-133 1.4GB 16M 12.1" TFT 6X....3829
4X P-150 2.1GB 16M 12.1" TFT 10X....4989

**OLIVETTI**
-150 2.1G 16M 12.1" TFT 8x 33.6....3499

**SHARP**
P-150 1.44G 16M 12.1" DS 10xCD....2199
P-150 1.44G 11.3" TFT 10xCD 33.6....2979
MXP-166 2G 32M 12.1" TFT 10X 33.6....CALL

**TEXAS INSTRUMENTS**
T P-133 1.35G 16M 11.3" TFT....2492
Extensa 900CDT P-133 1.35G 16M 11.3" TFT 6X....2999

**TOSHIBA**
110CS P-100 810M 8M 11.3" DS....1269
200CDS P-100 810M 8M 11.3" DS 6xCD....1523
430CDT P-120 1.3G 16M 11.3" TFT 10X....2659
510CDT P-133 2.0G 16M 12.1" TFT 10X 28.8....3399
650CT P-133 1.2G 16M 11.3" TFT....3579
660CD MMX-P166 1.3G 16M 12.1" TFT 10X....2699
660CDT P-150 1.3G 16M 11.3" TFT....4625
740CDT MMX-P166 2G 16M 13.3" TFT 33.6....6279
740CDT NT-4 MMX-P166 3G 16M 13.3" TFT 10X 33.6....6999

### DESKTOPS

**AST**
Bravo MS P-133 1.2G 16M / MS P-168 1.2G 16M....979/1115
Bravo MS-T, PPro-200, 2.5G 16M 8xCD....2225

**CDMPAQ**
Deskpro 2000 P-120 1.2G 8M....1036
Deskpro 2000 P-133, 1.2G 16M....1379
Deskpro 2000 P-166, 1.2G 16M....1599
Deskpro 4000 P-133, 1.6G 16M e-net....1619
Deskpro 4000 P-166, 2.5G 16M....2052
Deskpro 6000 P-166 1.08G 16M 8x e-net....2090

**HEWLETT PACKARD**
Vectra VE3 P-133 Workstation No HD....749
Vectra XA DT PP-200 32M Workstation 8X 10/100BT....2219
Vectra 525 MCX MT P-166MMX 24M 2.5GB 16X....1999
Vectra 525 CD MT P-200MMX 24M 2.5GB 16X....2149
Vectra 525 MCX MT P-200MMX 32M 3 8GB 16X....2699

**IBM**
PC350 P-166 1.6G 16M....1749
PC365 PP-200 1.6G 64M 8X NT....2496

### SERVERS

**AST Servers**
Manhatten O, P-200DMHz, 4G 32M....3479
Manhatten S PR200 2G 64M 1DBT....5799

**Compaq Servers**
Prolinat 600 PPro-180 4.3G 32M....3899
Prolinat 800 PPro-200 4.3G 32M....4199
Proliant 2500 P Pro200 4.3G 32M....6299

**Hewlett Packard Servers**
Netserver LC, P-166, no HD, 32M....2499
Netserver LC, P-166, 2.1G, 32M....3399
Netserver LH, PP-200, No HD, 32M....9999

**IBM Servers**
PC Server 350, P-166, 2.25G, 32M 6xCD....CALL
PC Server 520, P-100, 4-2.5G, 64M 6xCD....14,199

### MULTIMEDIA PC'S

**AST**
AST Adventure P-133 16MB 1GB 8X 33.6....999
AST Advantage 9312 P-166, 2.5G 24M....1865
AST Advantage 829 P-200 2.5G 16M....2699
IBM Aptiva S78 P-166, 3.2G 16M 6xCD....2289

**SONY**
Vaio PCV-100 MMX-P166, 2.5G 32M, 28.8 16xCD....1899
Vaio PCV-120 MMX-P200, 3.8G 32M, 28.8 16xCD....2249

**TOSHIBA**
Equium 5160d P-166MMX 2.1GB 12X 32M....1878
Equium 5200D P-200MMX 2.5GB 12X 32M....2065
Equium 6200M PP-200 4.3GB 32MB 12X WIN NT....3429

### NETWORKING

**3COM**
3COM Etherlink III ISA coax....103
3COM 3C900TPO PCI / 5-pack....109/509
3COMSuperstack II 12-port Hub / 24-port Hub....509/847
Intel EtherExpress Pro 10+ / Pro 10/100 PCI....89/209
Linksys EtherFast 10/100BT TX LAN....103
Linksys Workgroup Hub 10-port/20-port....105/186
Netgear EN104 4-prt 10BT Hub / EN116 E-net 16-prt 10BT Hub..79
Novell NetWare 4.1 / Intranetware 10-user....Call /1399
Xircom Creditcard IIPS Ethernet 10BT....132
Xircom Creditcard IIPS E-net COMBO 10BT/coax....169

### VIDEO CAPTURE

AITech Pro PC TV Plus....139
AITech Wavewatcher/TV2....280
All-in-Wonder (TV Tuner, Video Capture, & TV sel display)....338
Creative Sharevision PC3000....389
Intel SmartVideo III/ Smart Video Pro....172/388
Sigma Reel Magic Ultra MPEG....339

### POWER PROTECTION

APC Back-UPS 280B/400B / 450/600....99/145/169/237
APC Back-UPS 900/1250....339/449
APC Back-UPS Pro 280/420/650....140/230/280
APC Smart-UPS 420VS/650VS /1000VS/1400VS....259/295435/559
APC Smart-UPS 450/700 /1400/2200....275/338/594/1029

### SCANNERS

**HEWLETT PACKARD**
ScanJet 4S / ScanJet 4SI / 5P /4C....192 / 2359 / 369 / 749

**MICROTEK**
ScanMaker E3 w/Imagestar / ScanMaker E6 Standard..185/319

**POLARDID FILM SCANNERS**
Sprint Scan 35-LE / Sprint Scan 35ES....729/1499

**UMAX**
Astra 1200S 600x1200 w/Photodeluxe....Just Announced
New! PowerLook II PS w/Photoshop Full....1299

### MONITORS

**ADI**
ProVista 14" SVGA 1024x768 .28mm....205
MicroScan 4V 15" 1280x1024 .28mm....299
MicroScan 5V 17" 1280x1024 .25mm....499

**EIZO**
FlexScan TXC7S 17"....989

**MAG INNOVISION**
DX1595 15" 1280x1024 .28mm....343
DX700T 17" 1280x1024 .25mm....549

**MAGNAVDX**
75M749 14" Mono 720x400....109
CM2099 14" 1024x768 .24mm....219
MV5011 15" 1024x768 .24mm (digital)....289
M37000 17" 1280x1024 .24mm....519
CM5600 20" 1600x1280 .24mm (digital)....1029

**MITSUBISHI**
Diamond Pro 91TXM 21" 1600x1200 .28....1471
Diamond Scan 20H 20" 1280x1024 .28....1349

**NEC**
Multisync M700 17" 1280x1024 .25mm....749
P750 17" 1600x1280 .25mm....879
E1100 21" 1600x1280 .28mm....1599

**SONY**
CPD-100SX 15" 1280x1024 .25mm....367
CPD-100SF 15" 1280x1024 .25 (digital)....369
New! CPD-100VS 15" 1280x1024 w/Speakers....479
New! CPD-200VS 15" 1280x1024 w/Speakers....829
CPD-200SX 17" 1280x1024 .25mm....639
CPD-200SF 17" 1280x1024 .25mm (digital)....739
GDM-17SE2T 17" 1600x1200 .25mm*....829
CPD-300SFT 20" 1280x1024 .30mm TCO....1549
GDM-W900 24" 1920x1200 .25mm....4349

**VIEWSONIC**
17EA 17" 1280x1024 .28mm w/speakers....589
P810 21" 1600X1280 .25mm....1479

**VISIONMASTER by IIYAMA**
MF-8617E 17" 1280x1024 .26mm....575
MT-9017E 17" .25 / MT-9021E 21" 1600x1200 .28....695/1415

### MULTIMEDIA

Creative Labs Awe 64 /Awe 64 Gold, 4MB....185/223
Creative Labs 12X Blaster/ Discovery 12X Kit w/SB 32..162/283
Altec Lansing ACS53 System w/subwoofer /ACS500....125/299
Labtec 3210 20-watt Speakers....82
Panasonic EASMPC25 Speakers....45
Sony SRS-PC51 5W / SRS-PC91 10-watt....63/128
Creative Sound Blaster 16 Value IDE....89
Creative Sound Blaster 32 IDE PnP /64 AWE PnP....135/189

### DIGITIZERS

Altek XGT 12X12 16button/ 12x18 16-btn....249/429
Wacom Artpad II 4x5 w/ Dabbler/12x12....149/409

### MODEMS

Multitech MT2834ZDX 28.8 ext....125
Simple Tech communicator simplejack 33.6....165

**U.S. ROBOTICS**
Megahertz XJ4336 33.6 PC Card V.34(cellular capable)....228
Megahertz XJ4288 xJack 28.8 PC Card V.34....233
Sportster 28.8 Winmodem Internal....89
Sportster Voice x2 56K Faxmodem int./ext....219/239
Sportster 33.6 V.34 int./ext.(upgradable to 56K)....125/145
Sportster PCMCIA 2.1 28.8 w/fax V.34....199
Sportster x2 56K Faxmodem int./ext....199/219

### DRIVES

**CD-ROM DRIVES**
Axonix 10X PCMCIA CD Drive....379
Microsolutions 4X Par /8X Par....189/269
Toshiba 15X SCSI-2....199
Panasonic KXL-783A 8X PCMCIA CD player....369
Plextor 12X ext./int. SCSI....283/249

**CD RECORDABLES**
HP Surestore 6020 6X2 int./ext....449/539
Pinnacle Micro RCD 4x4 int./ext....839/929
Smart & Friendly 4006 6x4 int./ext....839/929
Blank 74mm. Media....Many Brands....CALL

**REMOVABLE STORAGE**
IOMega Ditto 2G int. (*After $30 Mail-in Rebate, exp. 7/31)....93*
IOMega Ditto 2G par. (*After $50 Mail-in Rebate, exp. 7/31)....143*
IOMega Ditto 3.2G int.(*After $50 Mail-in Rebate, exp. 7/31)....165*
IOMega Zip / JAZ 1.GB int....169/372
Pinnacle Micro Vertex 2.6GB Kit / Apex 4.6G....1279/1499
Syquest EZ-Flyer 230 Par. / Syjet 1.5GB int....239/367
Seagate 4mm DAT 8GB int./ext....848/949
Seagate Tapestor 3.2G ext. parallel....215
Seagate Tapestor 4G ext. SCSI....449

**HARD/FLOPPY DRIVES**
Micropolis 1991W 9GB WSCSI-2....1243
Quantum Fireball 2.5GB FATA / Fireball TM 3.2G....265/329
Maxtor EIDE 3GB....275
Seagate Hawk ST32151N 2.1GB SCSI-2....509
Western Digital Caviar AC22100 2.1G / 3.1G....219/289

### CONTROLLERS

Adaptec AHA-1520B/1540CP/ 2944UW....62/185/373
Adaptec AHA-2742 SCSI-2 EISA w/Fiop Kit....345
Adaptec AHA-2940UW PCI SCSI-3 Master Kit....283
Boca IDE 2-HDD, 2-FDD IDE002....29

### VIDEO BOARDS

ATI 3 Xpression 2MB DRAM PCI....96
ATI 3D Xpression 4MB PCI....127
ATI 3D Graphics XPression + PC2TV 2MB....129
Hercules Terminator 64 3D / 64/VIDEO 2MB....143/89
Jazz G-Force 3D 2M (64-bit 2D/3D Performance)....139
Matrox Millennium 3D PCI 2M/4M....179/249
Matrox Mystique PCI 2M & 4M....129/160

### PRINTERS

**ALPS**
MD-2010 600dpi Color / MD-4000 Clr + Scanner....409/599

**CANON**
BJC-240/BJ-30 /BJC-70....179/255/299
BJC-4200/4550/BJC-620....262/451/365

**EPSON**
Stylus Color 400 720dpi, 6ppm....225
Stylus Color 600/ Stylus 800 1440dpi....288/419
Stylus 1500 / Stylus Pro XL (12.5"x18")....898/1699

**HEWLETT PACKARD**
DeskJet 400 / DeskJet 680C, 5ppm....179/289
DeskJet 820CXI / 870CXI....385/479
DeskJet 1600C/DeskJet 1600CM....1299/1939
LaserJet 5LFS / LaserJet 5 12ppm 4M....378/1239
LaserJet 5M / LaserJet 5N 12ppm 6MB 600dpi....1725/1503
LaserJet 5SI/LaserJet 5SI MX 24ppm....2649/3719
LaserJet 6P / LaserJet 6MP 8ppm 600dpi Pstscript....739/984

**LEXMARK**
Optra E / Optra R+ / Optra RN+/ Optra LX+ .484/1229/1469/1849

**DKIDATA**
Turbo 184/320/321/520/521....225 / 315 / 442 / 379 / 489
600e/610e/610ePS/OL1200....397 / 489 / 699 / 899

Payment Methods! • Leasing Available • Purchase orders accepted from educational institutions, federal & state agencies and approved corporations. • C.O.D's welcome.

Visit Us On The Web! http://www.mcworks.com

800-65-WORKS 96757

Hours Monday-Friday 8am-7pm CST
24-HOUR FAX 847-367-8540
International Line 847-367-6519

MasterCard VISA DISCOVER NOVUS

**Policy Information**
• No surcharge for credit cards • All prices subject to change • Orders outside the USA require payment by wire transfer or American Express • We check for stolen credit cards • All returns for credit, repair or exchange must have a "RA" number issued by our customer service department • Returned merchandise may depend on manufacturer policy* • Returned merchandise must in good condition and shipped to our main warehouse located at: 600 Bunker Court, Vernon Hills, IL 60061

Circle 169 on reader service card

WE WILL TRY TO MATCH OR BEAT ANY ADVERTISED PRICE. CALL FOR LATEST PRICING!!

WE ACCEPT PO'S FROM QUALIFIED FIRMS

30 DAY* MONEY BACK GUARANTEE

# MEMORY

LIFETIME WARRANTY

SECURITY WILL CALL WINDOW NOW OPEN! NO SURCHARGE FOR MC, VISA AE & DISCOVER

## HOT BOX SPECIALS

*WE'RE ON THE WEB!!!*

*Finally L.A. Trade is on the Web. Check out our website at*

www.4LATrade.com

*We have a Daily Special on the web – Memory at $1.00 above our Cost. You can place your order on our "secure" Order Form.*

*Check us out today!*

## 72 PIN SIMMS (FPM, EDO)

| | 60NS | 70NS |
|---|---|---|
| 256 x 36 | 14.00 | – |
| 512 x 36 | 19.00 | – |
| 256 x 32 | 9.00 | – |
| 512 x 32 | 19.00 | – |
| 1 x 36 4 mg | 35.00 | 35.00 |
| 2 x 36 8 mg | 62.00 | 61.00 |
| 4 x 36 16 mg | 102.00 | 101.00 |
| 8 x 36 32 mg | 199.00 | 199.00 |
| 16 x 36 64 mg | 489.00 | 489.00 |
| 1 x 32 4 mg | 25.00 | 24.00 |
| 2 x 32 8 mg | 47.00 | 46.00 |
| 4 x 32 16 mg | 84.00 | 83.00 |
| 8 x 32 32 mg | 169.00 | 168.00 |
| 16 x 32 64 mg | 456.00 | 456.00 |
| 1 x 32 4 mg EDO | 25.00 | 26.00 |
| 2 x 32 8 mg EDO | 48.00 | 48.00 |
| 4 x 32 16 mg EDO | 169.00 | 169.00 |
| 8 x 32 32 mg EDO | 478.00 | 478.00 |

## DIMMS (168 pin)

| | 16Mg | 32Mg | 64Mg | 128Mg | 256Mg |
|---|---|---|---|---|---|
| INDUSTRY STANDARD DIMMS | | | | | |
| Unbuffered | | | | | |
| 3.3V ECC, EDO | Call | Call | Call | Call | Call |
| 3.3V EDO | Call | Call | Call | Call | Call |
| 5.0V EDO | Call | Call | Call | Call | Call |
| 5.0V FPM | Call | Call | Call | Call | Call |
| Buffered | | | | | |
| 3.3V ECC, EDO | Call | Call | Call | Call | Call |
| 3.3V ECC, FPM | Call | Call | Call | Call | Call |
| APPLE | | | | | |
| 1 x 64 | 8Meg | | | | 46.00 |
| 2 x 64 | 16Meg | | | | 84.00 |
| 4 x 64 | 32Meg | | | | 175.00 |
| 8 x 64 | 64Meg | | | | 329.00 |
| DELL, OPTIPLEX, GXPRO 200 | | | | | |
| 3.3V ECC, EDO | 16Meg | | | | 119.00 |
| 3.3V ECC, EDO | 32Meg | | | | 249.00 |
| 3.3V ECC,EDO, 8/32chip | 64Meg | | | | 479/845 |
| 3.3V ECC, EDO | 128Meg | | | | 1690.00 |
| DELL POWER EDGE 2100/4100 | | | | | |
| 3.3V ECC, EDO | 16Meg | | | | 119.00 |
| 3.3V | 32Meg | | | | 249.00 |
| 3.3V, 8/32 chip | 64Meg | | | | 479/845 |
| 3.3V | 128Meg | | | | 1690.00 |
| 3.3V | 256Meg | | | | 3627.00 |
| DELL & GATEWAY | | | | | |
| *3.3V SDRAM* | *8Meg* | | | | *62.00* |
| *3.3V SDRAM* | *16Meg* | | | | *119.00* |
| *3.3V SDRAM* | *32Meg* | | | | *229.00* |
| *3.3V SDRAM* | *64Meg* | | | | *469.00* |
| *MOTOROLA (Apple Compatible)* | | | | | |
| 3.3V EDO | 8Meg | | | | 54.00 |
| 3.3V EDO | 16Meg | | | | 99.00 |
| 3.3V EDO | 32Meg | | | | 197.00 |
| 3.3V EDO | 64Meg | | | | 383.00 |

## ECC SIMMS

Pentium Pro 72 Pin (install in pairs) / SIMMS

| | | | |
|---|---|---|---|
| 8Meg | 59.00 | 64Meg | 599.00 |
| 16Meg | 119.00 | 128Meg | 1206.00 |
| 32Meg | 239.00 | | |

## SIMM MODULES (Add $5.00 for SIPP)

| | 60NS | 70NS | 80NS | 100NS |
|---|---|---|---|---|
| 256 x 9 | – | 6.00 | 6.00 | 5.00 |
| 1Meg x 9 (3 chip) | – | 6.00 | – | – |
| 1Meg x 9 (9 chip) | 17.00 | 17.00 | 12.00 | 10.00 |
| 4Meg x 9 | 33.00 | 33.00 | 33.00 | – |
| 16Meg x 9 (9 chip) | 139.00 | 139.00 | – | – |

## CACHE MODULES

*256K (160 pin) Pipeline Burst Cache Module $22.00 (Coast Ceip)*

*512K (160 pin) Pipeline Burst Cache Module $39.00 (Coast Ceip)*

*256K (160 pin) Async Cache Module compatible with IBM Aptiva A&M Series $59.00*

*256K (160pin) Async Coast Module $29.00*

## CACHE MEMORY

| | 12NS | 15NS | 20NS | 25NS |
|---|---|---|---|---|
| 32Kx8 | 9.00 | 4.50 | 4.25 | 4.00 |
| 32Kx8 (3.3V) | – | 14.00 | 9.50 | – |
| 64Kx1 | – | 11.00 | 9.00 | 8.00 |
| 64Kx8 | – | 15.00 (5V) | – | – |
| 128Kx8 | – | 29.50 | 26.00 | 24.00 |
| 32x8 SOJ 3.3V | – | 12.00 | 11.00 | 9.00 |
| 128x8 SOJ | – | 89.00 | – | – |
| 512x8 SOJ | – | – | 109.00 | – |

## INTEL Math Chips

| | |
|---|---|
| 80287-XL | 29.00 |
| 80387-DX (Does All) | 54.00 |
| 80487-SX (Does All) | 183.00 |
| Intel SX (Does All) | 54.00 |
| Intel SL Mobil | 49.00 |

Lowest price on Intel overdrive chips

## Individual D-RAM Chips

MEMORY FOR IBM & APPLE

| | 40NS | 50NS | 60NS | 70NS | 80NS |
|---|---|---|---|---|---|
| 1Megx1 | – | – | 5.00 | 4.00 | 2.00 |
| 1Megx4 | – | – | 19.00 | 18.00 | 17.00 |
| 1Megx4 (Zip Pk) | – | – | 12.00 | 11.00 | 10.00 |
| 256x4(Page Dip) | – | – | 7.25 | 6.75 | 6.50 |
| 256x4(Page Zip) | – | – | 9.25 | 9.00 | 8.95 |
| 256x4(Video Zip) | – | – | – | 10.95 | 9.95 |
| 256x8(SOJ) | – | – | 12.00 | 11.00 | – |
| 256x16 SOJ | 34.00 | 29.00 | 29.00 | 19.00 | – |
| 256x16 SOJ Edo | – | – | 29.00 | – | – |
| 256x16 Video Zip | – | – | – | 29.00 | – |

## Make Your 486 Run like a Pentium®

Kingston Turbo Chip – 3X Faster, for 486 Based Dx², Dx, Sx², Sx.....ONLY $129.00

Out performs Intel overdrive Pentium 83

*UP TO 396% PERFORMANCE INCREASE!!*

## VIDEO MEMORY MODULES

| | | |
|---|---|---|
| Matrox Millennium | 2Meg/4Meg/6Meg WRAM | 89/159/229 |
| Matrox Mystique | 2Meg SGRAM | 59 |
| ATI 3D Pro Turbo | 2Meg/4Meg | 89, 179 |
| ATI Xclaim 3D | 4Meg SGRAM | 179 |
| ATI 3D Xpression | 2Meg SDRAM | 79 |
| Apple PowerMac 4400 | 2Meg/4Meg | 89/139 |
| NEC Powermate Pro 150, 220 | 2Meg,/6Meg WRAM | 129, 259 |
| HP Vectra XV/6, VT/6, VA, XA | 2Meg/6Meg WRAM | 129, 259 |
| Compaq 1Meg Video 213922-001 | 1Meg | 69 |
| Compaq Deskpro 2000, 4000, 6000 | 2Meg/6Meg WRAM | 129/299 |

*Many More Please Call*

## NEC MEMORY

| | | |
|---|---|---|
| Ready 5010, 7010, 7020, 9010, 9022 (pairs) | 4Meg/8Meg/16Meg/32Meg | 22/43/94/186 |
| Ready 9510, 9520, 9522, 9530, 9532 (pairs) | 4Meg/8Meg/16Meg/32Meg | 22/43/94/186 |
| Ready 7022 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 22/43/94/186 |
| Image P60, P90, 0, P100E (pairs) | 4Meg/8Meg/16Meg/32Meg | 22/43/94/186 |

*We Carry All NEC Memory*

## HEWLETT PACKARD MEMORY

| | | |
|---|---|---|
| Netserver 4/66LC-5/133LC (pairs) | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Netserver LE 486SX33 – 486DX266 | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Netserver LH Plus 5/133, 5/166 (EDD, ECC) | 16Meg/32Meg/64Meg/128Meg | 129/239/486/999 |
| Netserver 4/33LM – 5/100LM (pairs) | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Netserver 5/75LS – 5/133 LS4 (pairs) | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Pavillion 5010-7170 (pairs) | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Vectra 500 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Vectra VA 6/180, 6/200 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Vectra VE2 5/75 – 5/133 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Vectra XA 6/180, 6/200 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |
| Vectra XM4 Series | 4Meg/8Meg/16Meg/32Meg | 34/59/99/199 |

*We Carry Memory for ALL Models – Call*

## We also sell Memory for: Dell, Gateway, DEC, Sun, Zenith, Acer and Epson

NO SURCHARGE FOR MASTERCARD, AMEX, VISA OR DISCOVER. PURCHASE ORDERS ACCEPTED FROM FORTUNE 2000, GOVERNMENT & INSTITUTIONS. California orders add 8.25%sales tax. Returned orders or ordered wrong parts are subject to a 20% restocking fee. (Memory chips not installed in boards.) We accept International orders shipped via UPS Air, APO, FPO orders welcome. Customers are expected to pay customs and "other" charges if shipped Int'l. All credit card charges verified for fraudulent use. SORRY, NO REFUNDS AFTER 30 DAYS – EXCHANGES ONLY. If you receive defective merchandise we exchange only—no refunds. We accept MC, VISA, Discover, AE, prepaid orders, purchase orders, wire transfer, COD (cashiers check) orders, cash & cashiers checks. Orders shipped by UPS, FEDX must be signed for
• ALL MANFACTURER PART #'S ARE FOR REFERENCE ONLY • MINIMUM ORDER $40.00 • NO REFUNDS ON SHIPPING.

*certain restrictions apply. All prices final on date of sale.

## IBM PS/1, PS/2 MEMORY MODULES

| | | |
|---|---|---|
| Aptiva 300, 500 Series | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| Aptiva 700 Series (pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| Aptiva A Series (pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| Aptiva C Series (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| Aptiva M Series | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC 330 Models 6571-6576 | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC 330 Model 6577 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC 340 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC 350 Models 6581-6585 | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC 350 Model 6586 (pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC 350 Model 6587 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC 360 | 4Meg/8Meg/16Meg/32Meg | 39/59/109/199 |
| PC 730 Models 6875-6876 (pairs) | 4Meg/8Meg/16Meg/32Meg | 39/59/109/199 |
| PC 730 Model 6877 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC 750 Models 6885-6886 (pairs) | 4Meg/8Meg/16Meg/32Meg | 39/59/109/199 |
| PC 750 Model 6887 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 24/49/99/169 |
| PC Server 310 (pairs) | 4Meg/8Meg/16Meg/32Meg | 39/59/109/199 |
| PC Server 500 (ECC, pairs) | 4Meg/8Meg/16Meg/32Meg | 59/79/119/249 |
| P/S 1, 30 Pin Simms | 1/Meg/4Meg | 12/34 |
| P/S 1, 72 Pin Simms | 4Meg/8Meg/16Meg/32Meg | 39/59/109/199 |
| P/S 2, 55SX, 65SX | 4Meg | 49 |
| P/S 2, 53, 53LS, 56, 57 | 4Meg/8Meg | 39/69 |
| P/S 2, 95XP (ECC, pairs) | 4Meg/8Meg | 49/79 |
| P/S 2 Server, 95, 195, 295 (ECC, pairs) | 4Meg/8Meg/16Meg/32Meg | 59/79/119/249 |

*Call for All Rise 6000 Memory — Call for All Valuepoint Memory*

## IBM NOTEBOOK & LAPTOP MEMORY

| | | |
|---|---|---|
| Thinkpad 340, 345, 355, 360, C, CE | 4Meg/8Meg/16Meg | 49/79/149 |
| Thinkpad 365C, CS, CO, E, ED | 4Meg/16Meg | 39/129 |
| Thinkpad 365X, 365XD | 8Meg/16Meg/32Meg | 69/139/398 |
| Thinkpad 500, 510CS | 4Meg/8Meg/16Meg | 59/89/149 |
| Thinkpad 560 | 8Meg/16Meg/32Meg | 69/139/389 |
| Thinkpad 700, 720, 750, CL57SX | 4Meg/8Meg/16Meg/32Meg | 39/79/159/268 |
| Thinkpad 701, 701C | 4Meg/8Meg/16Meg/32Meg | 49/69/109/499 |
| Thinkpad 730T, TE | 4Meg/8Meg/16Meg | 49/109/189 |
| Thinkpad 755C, CE, CO, CS | 4Meg/8Meg/16Meg/32Meg | 39/69/129/419 |
| Thinkpad 760C, CO, L, LO | 4Meg/8Meg/16Meg/32Meg | 89/169/339 |
| Thinkpad 760E, ED, EL, ELO | 8Meg/16Meg/32Meg | 79/129/399 |

## COMPAQ MEMORY MODULES

| | | |
|---|---|---|
| Deskpro 486/25, 33L, 50L | 2Meg/8Meg/32Meg | 29/79/199 |
| Deskpro 3/25I, 33I, 4/25IS, 66I | 2Meg/4Meg/8Meg | 39/69/89 |
| Deskpro 386, 486 M Series | 2Meg/4Meg/8Meg | 29/39/69 |
| Deskpro M Series Expansion Board | 0K (no memory) | 119.00 |
| Deskpro 450, 4100, 575, 590, 5100, 5133 | 4Meg/8Meg/16Meg/32Meg | 24/42/79/159 |
| Deskpro 575, 5120, 5133, 5150, 5160 (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 24/42/79/159 |
| Deskpro 2000, 4000, 6000 Series (EDD, pairs) | 4Meg/8Meg/16Meg/32Meg | 24/42/79/159 |
| Deskpro 5/60M, 5/66M, XE560 (quads) | 2Meg/4Meg/8Meg/16Meg/32Meg | 39/49/69/139/239 |
| Deskpro XL (pairs) | 4Meg/8Meg/16Meg/32Meg | 49/69/139/239 |
| Deskpro XL 6150, 6200 (ECC, pairs) | 8Meg/16Meg/32Meg/64Meg, 128Meg | Call |
| Deskpro 2000, Presario 4112, 4122, 4712, 4716, 5526, 5528 | 1Meg Video | 69 |
| Presario 5536, 9232, 9234, 9240, 9250, 9260, 9642, 9660 | 1Meg Video | 69 |
| Presario 510, 520, 524, 660, 720, 724, 860 | 4Meg/8Meg/16Meg/32Meg | 24/42/79/159 |
| Presario 920, 924, 954, 974, 978, 992 | 4Meg/8Meg/16Meg/32Meg | 24/42/79/159 |
| Presario 833, 850, 860, 866 | 4Meg/8Meg/16Meg/32Meg | 39/64/119/239 |
| Presario 5528, 7110, 7152 | 4Meg/8Meg/16Meg/32Meg | 24/42/79/159 |
| Presario 7170, 7180, 9536, 9546, 9548, 9564 (pairs) | 4Meg/8Meg/16Meg/32Meg | 24/42/79/159 |
| Presario 9232, 9234, 9240, 9250, 9642, 9660 (pairs) | 4Meg/8Meg/16Meg/32Meg | 24/42/79/159 |
| Prollant 1000 5/60, 2000, R, 4000, R (quads) | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |
| Prollant 1500, 1500R (pairs) | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |
| Prollant 4500, 4500R (quads) | 4Meg/8Meg/16Meg/32Meg/64Meg | 39/64/119/239/599 |
| Prollant 5000, 5000R (pairs) | 32Meg/64Meg/128Meg/256Meg | Call |
| Prolinea 4/25S, 4/33, 4/66 | 2Meg/4Meg/8Meg | 29/39/69 |
| Prolinea (enhanced), MT | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |
| Prolinea 575, 590, 5100, 5120, 5133 (pairs) | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |
| Prolinea 5100, 5120, 5133, 5150, 5166 (EDD pairs) | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |
| Prolinea 575E, 100E, 120E, 575MX (pairs) | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |
| Prolinea 590MX, 5120MX (pairs) | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |
| Prolinea 6150E, 6180E (pairs) | 8Meg/16Meg/32Meg | 69/119/239 |
| Prosignia 300 5/75, 5/90, 5/120, 5/150 (pairs) | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |
| Prosignia 500 5/90, 5/120, 5/150 (pairs) | 4Meg/8Meg/16Meg/32Meg | 36/62/99/189 |

## COMPAQ NOTEBOOK/LAPTOP MEMORY

| | | |
|---|---|---|
| Armada 1120, T, 1125, 1130, T | 8Meg/16Meg/32Meg/64Meg | 69/129/239/809 |
| Armada 4100, 4110, 4120, 4130 (pairs) | 8Meg/16Meg/32Meg | 69/129/239 |
| Concerto 4/25, 433 | 4Meg/8Meg/16Meg | 49/79/139 |
| Contura 4/25, C, CX | 4Meg/8Meg/16Meg | 49/79/139 |
| Contura 400C, 400CX, 410C, 410CX | 4Meg/8Meg/16Meg | 49/79/139 |
| Contura 420C, 420CX, 430C, 430CX | 4Meg/8Meg/16Meg/24Meg | 49/79/139/199 |
| Contura Aero 4/25, 4/33 | 4Meg/8Meg/16Meg | 39/79/109 |
| LTE 5000, 5100, 5200, 5300, 5400 | 8Meg/16Meg/32Meg/64 Meg Kit | 79/129/249/479 |
| LTE Elite 440C, CX, 4/75CX | 4Meg/8Meg/16Meg/24Meg | 49/69/139/199 |
| LTE Lite 4/25 | 4Meg/8Meg/16Meg | 49/85/129 |
| Presario 1000, 1010, 1020, 1030, 1070, 1080 | 8Meg/16Meg/32Meg | 59/109/199 |

## DELL MEMORY

| | | |
|---|---|---|
| Dimension XPS M166S, M2090, P133s, 166s, 200s, P133v, 166v, 200v | 8Meg/16Meg/32Meg | Call |
| Dimension XPS P60, P75, P90, P100 | 4Meg/8Meg/16Meg/32Meg | Call |
| Dimension XPS P100c, 120c, 133c, 166c, XPS P75T, 100T (pairs) | 4Meg/8Meg/16Meg/32Meg | Call |
| Dimension XPS P100c, 120c, 133c, 166c, XPS P75T, 100T (pairs) edo | 4Meg/8Meg/16Meg/32Meg | Call |
| Dimension XPS Pro 150, Pro 200 (quads) | 4Meg/8Meg/16Meg/32Meg | Call |
| Dimension XPS Pro 150n, 180n, 200n (pairs) edo | 4Meg/8Meg/16Meg/32Meg | Call |

## LASER PRINTER MEMORY UPGRADES

| AMOUNT UPGRADED | 0K Bd | 256k | 1 | 2 | 3 | 3.5 | 4 | 5 | 6 | 8 | 16 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brother 630, 631, 641, 645 | – | – | 39 | 49 | – | – | – | – | – | – | – | – |
| Canon LBP 430 | – | – | 39 | – | – | – | 39 | – | – | – | – | – |
| Canon LBP 860, 1260 | – | – | – | 19 | – | – | 39 | – | – | 69 | 89 | 179 |
| Canon LBP4, 4Lite, 4plus | – | – | 129 | 179 | – | – | – | – | – | – | – | – |
| Epson Action Laser 1100, 1600 | – | – | 19 | 29 | – | – | 59 | – | – | 89 | 99 | – |
| Epson Action Laser II | – | – | 74 | – | 173 | – | – | 272 | – | – | – | – |
| Epson 8000, 1800, 4000, 4100, 4300 | – | – | 89 | – | 173 | – | – | 272 | – | – | – | – |
| Epson 1000, 1500, 5000, 5200 | – | – | – | 49 | – | – | 98 | – | – | – | – | – |
| HP 2, 2D– | – | – | – | 59 | – | – | 79 | – | – | – | – | – |
| *HP 3, 3D, 3P, 2P 2P+* | – | – | – | *59* | – | – | *79* | – | – | – | – | – |
| HP 4, 4M, 4SI, 4SIMX | – | – | – | 19 | – | – | 49 | – | – | 79 | – | – |
| HP 4P, 4PLUS, 4MPm 1600, 1600CM | – | – | 9 | 19 | – | – | 39 | – | – | 69 | – | – |
| HP 4L | – | – | 29 | – | – | – | – | – | – | – | – | – |
| HP 3SI | – | – | 9 | – | – | – | 39 | – | – | 69 | – | – |
| HP 5L | – | – | 39 | 49 | – | – | 67 | – | – | 99 | – | – |
| HP 5P, 5MP, 4V, 4MV, 6P, 6MP | – | – | 9 | 19 | – | – | 39 | – | – | 69 | 99 | – |
| HP Design Jet 600, 650, 200 | – | – | – | 19 | – | – | 39 | – | – | 69 | 109 | 199 |
| HP Design Jet 700, 750C Plus | – | – | – | – | – | – | 29 | – | – | 49 | 89 | 179 |
| *HP Deskjet 500, 500C, 510, 550,560* | – | *29* | – | – | – | – | – | – | – | – | – | – |
| HP Deskjet 1200C, 1200C/P | – | – | – | 39 | – | – | 49 | – | – | 89 | – | – |
| HP Paintjet XL300 | 54 | – | – | – | – | – | 69 | – | – | 144 | 299 | – |
| IBM Laser 4019, 4019E | – | – | – | – | – | 109 | – | – | – | – | – | – |
| IBM Laser 4029, 4037 | – | – | – | – | – | – | 49 | – | – | – | – | – |
| *IBM Laser 4039, 4079* | – | – | – | *39* | – | – | *69* | – | – | *99* | – | – |
| Lexmark Medley 4C, 4x, 4SX | – | – | Call | Call | Call | – | – | – | – | – | – | – |
| Lexmark, Optra L, LX, R, RX | – | – | – | – | – | – | 39 | – | – | 59 | 89 | 169 |
| Lexmark Valuwriter 300,600 | – | – | 29 | 39 | – | – | 89 | – | – | – | – | – |
| Lexmark Winwriter 200, 400, 600 | – | – | 29 | 39 | – | – | 89 | – | – | – | – | – |
| NEC 90, 290 | – | – | – | 89 | – | – | – | – | – | – | – | – |
| NEC 95, 97 | – | – | – | 59 | – | – | – | – | – | – | – | – |
| Oki 400 | – | – | – | 59 | – | – | – | – | – | – | – | – |
| Oki 400E, 400EX, 410E, 410EX | – | – | 67 | 89 | 169 | – | 189 | – | – | – | – | – |
| Oki 810E, EX, 600E, EX, 610E, EX | – | – | 29 | 79 | – | – | 119 | – | – | 119 | 229 | – |
| Oki 830, 840 | – | – | – | 59 | – | – | – | – | – | – | – | – |
| Panasonic 4420/4450I | – | – | – | 79 | – | – | 109 | – | – | – | – | – |
| *Panasonic 4410/4430* | – | – | – | *59* | – | – | *89* | – | – | – | – | – |
| Panasonic 4450 | – | – | 89 | – | – | – | – | – | – | – | – | – |
| Panasonic 4400/5400 | – | – | 49 | 69 | – | – | 109 | – | – | – | – | – |
| Panasonic 4440, 5410 | – | – | 69 | – | – | – | 109 | – | – | – | – | – |
| Panasonic 6500 | – | – | 14 | 29 | – | – | 79 | – | – | – | – | – |
| Sharp 9400, 9460, 9600, 9700E | – | – | 49 | 69 | – | – | 119 | – | – | – | – | – |
| Sharp 9500, E, H, 9700, H | – | – | 49 | – | – | – | 236 | – | – | – | – | – |

CUSTOMER SERVICE & TECHNICAL: OPEN M–F, 9–4 PST

All products brand new & guaranteed • We buy excess inventory

*Trademarks are registered with their respective companies.*

L.A. TRADE

22825 Lockness Avenue • Torrance, CA 90501

## BATTERIES

★ ★ CALL FOR NOTEBOOK AND LAPTOP BATTERIES ★ ★
Compaq, IBM, Toshiba, Epson, AST, TI and More!!

| | | | |
|---|---|---|---|
| ACER 730 thru 789 | $129 | NEC Versa E, V | $135 |
| Canon Innova Book 350, 360, 475 | 134 | NEC Versa S | 99 |
| Compaq Contura 3/25, 4/25 | 109 | Sharp 3010, 3020, 3050, 3060, 3150 | 129 |
| Compaq Aero, 400, 410, 420, 430 | 109 | Sharp 8700, 8800, 8900 | 129 |
| Compaq LTe 5000 Series | 139 | Ti Exstensa 450, 455, 510, 515 | 139 |
| Epson Action Note 650, 660 | 119 | Ti Exstensa 550, 555, 560, 570 | 149 |
| Epson Action Note 800, 866, 880, 910 | 119 | Ti Exstensa 600, 605, 650 | 169 |
| IBM Thinkpad 355, 360 | 119 | Toshiba 400, 405, 410, 415, 420, 425, 430 (NIMH) | 219 |
| IBM Thinkpad 365 C, E0, XD | 129 | Toshiba 100, 105, 110, 115, 200, 205 | 105 |
| IBM Thinkpad 701 | 109 | Toshiba 2100 Series | 99 |
| IBM Thinkpad 750, 755 | 179 | Toshiba 2400, 2450, 1900, 1950, 1960 | 109 |
| IBM Thinkpad 755 CD, CE, CV, CX | 179 | Toshiba 4700, 4800, 4850, 4900 | 109 |
| NEC Versa 2400, 2405, 2430, 2435 | 159 | Toshiba T4500, T4600 | 159 |

## TOSHIBA LAPTOP MEMORY

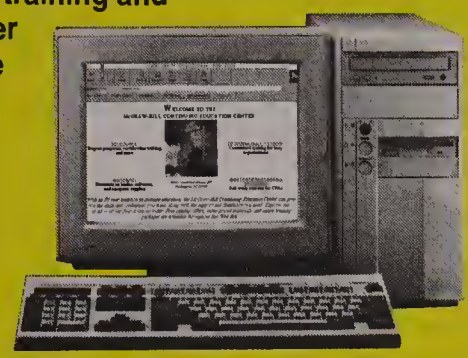
| MODEL | AMT. UPGRADED | PRICE |
|---|---|---|
| *Tecra 500/P650* | *8Meg/16Meg/32Meg/48Meg/128Meg* | *79/118/209/369/599/1249* |
| *Tecra 700 (SDRAM)* | *8Meg/16Meg/32Meg* | *79/139/243* |
| *Tecra 710, 720* | *8Meg/16Meg/32Meg/64Meg/128Meg* | *79/129/229/849/1694* |
| *Tecra 730 CDT, 730X CDT, 740 CDT* | *8Meg/16Meg/32Meg/84Meg* | *Call* |
| T2000SXE/2200SX/T1800, 1850, C | 8Meg | 94.00 |
| T2100, 2105, 2150, 2155, 2110, 2115 | 4Meg/8Meg/16Meg/24 Meg | 39/59/129/189 |
| T4500, C, T4600, T4700, T1900, C, T1910, T1950 (3.3 v) | 4Meg | 39.00 |
| T4500, C, T4600, T4700, T1900, C, T1910, T1950 (3.3 v) | 8Meg | 79.00 |
| T4500, C, T4600, T4700, T1900, C, T1910, T1950 (3.3 v) | 16Meg/32Meg | 139/243 |
| T3400CT, T2400, T3600 | 4Meg/8Meg/16Meg/24Meg | 59/79/149/199 |
| *T100, 105, 110, 115, 205, 210* | *8Meg/16Meg/32Meg* | *79/129/229* |
| *T400, 405, 410, 415, 420, 425, 430* | *8Meg/16Meg/32Meg* | *79/129/229* |
| *T400CS, 400CDT, T100, 105 Edo* | *8Meg/16Meg/32Meg* | *79/129/229* |
| T600, 610, CT Edo, 660 | 8Meg/16Meg/32Meg | 79/129/229 |

## NOTEBOOK, LAPTOP MEMORY

| MODEL | AMT. UPGRADED | PRICE |
|---|---|---|
| ACERNote 730C, 735C, 760C, 760CX, 780CX | 2Meg/4Meg/8Meg | 39/59/89 |
| ACERNote 763, 765, 782, 784, 786 | 4Meg/8Meg/16Meg | 49/69/129 |
| ACERNote Light 350, 352, 355 | 4Meg/8Meg/16Meg | 49/69/129 |
| ACERNote Light 356, 358, 359, 361 (pairs) edo | 4Meg/8Meg/16Meg | 49/69/129 |
| *ACERNote Nuovo 971, 972* | *8Meg/16Meg/32Meg* | *69/125/239* |
| ACERNote Pro 950, 954, 955, 957, 959 (pairs) | 4Meg/8Meg/16Meg | 59/79/139 |
| Ambra SN Series | 4Meg/16 Meg | 69/149 |
| Ambra N-75, N-100 | 4Meg/8/16 | 49/79/139 |
| *AST Ascentia A41, A42* | *8Meg/16Meg/32Meg/64Meg* | *79/139/329/675* |
| *AST Ascentia P30, P50* | *8Meg/16Meg/32Meg* | *79/149/269* |
| *AST Ascentia J10, J30, J50* | *8Meg/16Meg/32Meg/40Meg Kit* | *79/129/249/359* |
| AST Ascentia 900N, 800N, 810, 910 | 8Meg/16Meg | 79/119 |
| AST Ascentia 950 | 8Meg/16Meg | 79/132 |
| *AST Bravo & Explorer* | *4Meg/16Meg* | *79/149* |
| AT&T Globalyst 130, 200, 250 | 4Meg/8Meg/16Meg | 49/79/129 |
| Austin DX4, DX2, SX2, SX Series | 4Meg/16Meg | 69/189 |
| *Austin Edge CD P-133 edo* | *8Meg/16Meg* | *89/149* |
| *Austin Edge Duet (pairs) edo* | *16Meg/32Meg* | *129/229* |
| *Austin Vista* | *4Meg/8Meg/16Meg/24Meg* | *49/79/129/199* |
| Canon 1100 (pairs) | 4Meg/8Meg/16Meg | 59/79/119 |
| Canon Innova Book 150, 175 | 4Meg/16Meg | 59/139 |
| Canon Innova Book 200LS | 4Meg/8Meg/16Meg/24Meg | 59/89/179/249 |
| *Canon Innova Book 350CD, 360, 475* | *8Meg/16Meg* | *59/129* |
| *Canon Innova Book 480, 490 edo* | *8Meg/16Meg* | *89/149* |
| *CTX EZ Book 500, 600, 700 Pent, Series* | *4Meg/8Meg/16Meg* | *59/89/139* |
| DEC HiNote | 4Meg/8Meg/16Meg | 59/89/139 |
| *DEC HiNote Ultra, Ultra II* | *4Meg/8Meg/16Meg* | *49/69/119* |
| *DEC HiNote VP 520, 525, 535, 545* | *8Meg/16Meg/32Meg* | *89/139/269* |
| *DEC HiNote VP 5100, 5120* | *8Meg/16Meg/32Meg/64Meg* | *79/139/219/699* |
| *DEC HiNote VP, Css, LSS, CTS, LTS* | *8Meg/16Meg/32Meg* | *79/139/269* |
| *Dell Lattitude LM (pairs)* | *4Meg/8Meg/16Meg* | *59/79/129* |
| Dell Lattitude 433, C, CX | 4Meg/16Meg | 69/149 |
| Dell Lattitude LX, M | 4Meg/8Meg/16Meg | 59/89/139 |
| Dell Latitude XP, XPI | 4 Meg/8Meg/16Meg | 59/79/129 |
| Epson ActionNote 650, 650c, 660c, 660cx | 4Meg/8Meg/16Meg | 39/79/139 |
| Epson ActionNote 880, 866c, 890, 910 | 4Meg/8Meg/16Meg/20Meg | 49/79/139/199 |
| Epson ActionNote 4LC/25, 4LC/33, 4SLC/2-50, 4000 | 8Meg | 69.00 |
| *Fujitsu Lifebook 500, 600 Series edo* | *8Meg/16Meg/32Meg* | *69/139/269* |
| *Fujitsu Monte Carlo, Montego, Milan* | *8Meg/16Meg/32Meg* | *69/139/269* |
| Gateway 2000 Colorbook 4/33 | 4Meg/16Meg | 69/179 |
| Gateway 2000 Nomad 425 OXL/SXL | 4Meg/16Meg | 140/559 |
| Gateway 2000 486 Handbook or Liberty | 4Meg/16Meg | 49/139 |
| Gateway 2000 Solo Series | 4Meg/8Meg/16Meg | 69/89/139 |
| Gateway Solo Series 2100, 2200 edo | 8Meg/16Meg | 89/139 |
| *Hitachi C-Series* | *8Meg/16Meg/32Meg* | *79/129/229* |
| *Hitachi E-Series, MX Series* | *8Meg/16Meg/32Meg* | *79/139/269* |
| *Hitachi M-Series* | *8Meg/16Meg/32Meg* | *69/119/249* |
| HP Omnibook 530, 600 | 4Meg/8Meg/12Meg | 49/69/99 |
| HP Omnibook 800 | 8Meg/16Meg/32Meg | 79/119/209 |
| HP Omnibook 4000 | 4Meg/8Meg/16Meg | 59/89/139 |
| HP Omnibook 5000, 5500 | 8Meg/16Meg/32Meg | 69/119/219 |
| Leading Edge Aviva 2000 | 16Meg | 139 |
| Micron Transport Pentium (pairs) | 8Meg/16Meg | 89/149 |
| Midwest Micro Elite or Soundbook | 4Meg/8Meg/16Meg | 69/99/149 |
| Midwest Micro Elite or Soundbook Plus or Sndbk II, IIP | 4Meg/8Meg/16Meg | 69/99/149 |
| Midwest Micro Elite or Soundbook CD | 4Meg/8Meg/16Meg | 69/99/149 |
| NEC Ultralite Versa, E, V, MP | 4 Meg/8Meg/16Meg/20Meg/32Meg | 49/69/129/179/239 |
| NEC Versa S, Versa 2000C, D, 2205C | 4Meg/8Meg/16Meg | 49/79/119 |
| NEC Versa 4000, 4050/4080, 4200 | 4Meg/8Meg/16Meg/32Meg | 59/79/139/299 |
| *NEC Versa 6000, 6050, 6030* | *8Meg/16Meg/32Meg/64Meg* | *69/139/229/Call* |
| *NEC Versa 6200MX edo* | *8Meg/16Meg/32Meg/64Meg* | *69/139/229/Call* |
| Olivetti Echos P75-P1335 (pairs) | 4Meg/8Meg/16Meg | 59/89/149 |
| Packard Bell Statesman | 2Meg/8Meg | 29/79 |
| Panasonic CF-V21P, CF-580 | 4Meg/16Meg | 49/139 |
| Panasonic CF-V41 | 4Meg/8Meg/16Meg/32Meg | 49/69/139/289 |
| *Sager Midem, all models* | *4Meg/8Meg/16Meg/32Meg* | *69/99/169/399* |
| Samsung Sens 810 | 8Meg/16Meg | 79/139 |
| *

# Rush this postage-paid card for your free catalog!

**Only NRI gives you the training and the equipment for career advancement, part-time earnings, or even a business of your own.**



**Check one ☑**

**Please send my FREE catalog on NRI training in:**

- ❑ **Computer Programming**
- ❑ Microcomputer Servicing
- ❑ Visual Programming in C++
- ❑ PC Applications Specialist
- ❑ Desktop Publishing w/ PageMaker
- ❑ Telecommunications
- ❑ TV/ Video/Audio Servicing
- ❑ Electronic Music Technology
- ❑ Industrial Electronics & Robotics
- ❑ Networking with Windows NT
- ❑ Basic Electronics
- ❑ Mastering Microsoft Office
- ❑ Webmaster
- ❑ Paralegal
- ❑ Fiction/Nonfiction Writing
- ❑ Bookkeeping and Accounting
- ❑ Multimedia Programming

**OR GET YOUR DEGREE!**

- ❑ **New!** AAS Degree in Accounting
- ❑ **New!** AAS Degree in Business Management

Name *(Please print)* Age

Address *(No P.O. Box numbers please)* Phone

City/State/Zip

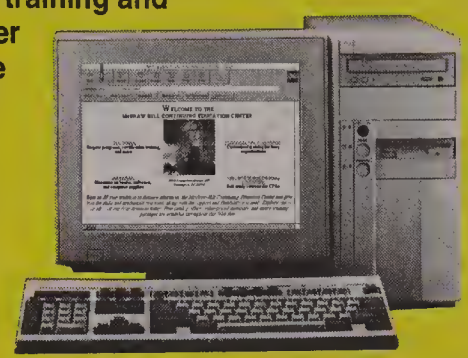
Accredited Member, Distance Education and Training Council 5497-0797

*A Division of The McGraw-Hill Companies*

For career courses approved under G.I. Bill, ❑ check for details


# Rush this postage-paid card for your free catalog!

**Only NRI gives you the training and the equipment for career advancement, part-time earnings, or even a business of your own.**


**Check one ☑**

**Please send my FREE catalog on NRI training in:**

- ❑ **Computer Programming**
- ❑ Microcomputer Servicing
- ❑ Visual Programming in C++
- ❑ PC Applications Specialist
- ❑ Desktop Publishing w/ PageMaker
- ❑ Telecommunications
- ❑ TV/ Video/Audio Servicing
- ❑ Electronic Music Technology
- ❑ Industrial Electronics & Robotics
- ❑ Networking with Windows NT
- ❑ Basic Electronics
- ❑ Mastering Microsoft Office
- ❑ Webmaster
- ❑ Paralegal
- ❑ Fiction/Nonfiction Writing
- ❑ Bookkeeping and Accounting
- ❑ Multimedia Programming

**OR GET YOUR DEGREE!**

- ❑ **New!** AAS Degree in Accounting
- ❑ **New!** AAS Degree in Business Management

Name *(Please print)* Age

Address *(No P.O. Box numbers please)* Phone

City/State/Zip

Accredited Member, Distance Education and Training Council 5497-0797

*A Division of The McGraw-Hill Companies*

For career courses approved under G.I. Bill, ❑ check for details

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 10008 WASHINGTON, D.C.

POSTAGE WILL BE PAID BY ADDRESSEE

NRI Schools
4401 CONNECTICUT AVENUE NW
WASHINGTON DC 20078-3543

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 10008 WASHINGTON, D.C.

POSTAGE WILL BE PAID BY ADDRESSEE

NRI Schools
4401 CONNECTICUT AVENUE NW
WASHINGTON DC 20078-3543

## With NRI training in Computer Programming, you can...

# Name Your Price!*

If you think computer programming is hot today, just look at the forecast for tomorrow — and for many years to come! The Bureau of Labor Statistics estimates that by 2005, computer-related employment will jump by an estimated 60% nationwide for trained programmers — with as many as 400,000 NEW jobs opening up!

Now, with NRI training, you can get the in-demand skills you need to build a top-paying career — or business of your own — in this high-growth, high-opportunity field!

***Those with up-to-the-minute skills can almost name their price.**
— *The Washington Post*, June 4, 1996

In as little as a year, you can become the highly skilled computer programmer today's companies seek — and see your NRI training literally pay off! In fact, according to the Washington Post, annual starting salaries range from $32,000 all the way up to $47,000 in some cities for those with expertise in the top programming languages!

### Master today's hottest languages!

NRI's step-by-step lessons and hands-on programming projects help you first master the design concepts used every day by successful PC programmers. You quickly move on to learn how to design, code, run, debug, and document programs in BASIC, C, and Visual Basic — plus you learn to generate fully functioning Windows 95 programs. And you do it all using the powerful Pentium® computer system included in your course.

And our new Online Connection lets you send e-mail to your instructor, attend virtual discussion groups, download supplemental information, and more!

### Train with a 166 MHz Pentium® processor-based multimedia PC, featuring...

**■ 16 meg RAM ■ 1.6 gigabyte hard drive ■ Super VGA color monitor ■ 8X CD-ROM drive with sound card ■ 33,600 baud fax/modem ■ Visual Basic ■ Power C ■ Windows 95 ■ Netscape Navigator™ Web browser ■ And more!**

*With NRI's new PC Options Plan, you can keep up with late-breaking advances in technology by upgrading your computer system at special student rates. You'll get all the details shortly before your computer is scheduled for shipment. It's NRI's state-of-the-art guarantee!*

### Learn to tap the power of the Internet

Now your course includes bonus training in PC Communications and the Internet. Using the Netscape Navigator™ Web browser we provide, you can effortlessly move from one site to another as you explore the vast resources of the Internet and World Wide Web.

## Send today for your FREE catalog

## CALL 1-800-321-4634, Ext. 2613

**or visit http://www.mhcec.com**

### SEND TODAY FOR FREE NRI CATALOG!

**NRI Schools** 4401 Connecticut Avenue, NW, Washington, DC 20008

✓ **Check one FREE career catalog only**
- ☐ **COMPUTER PROGRAMMING**
- ☐ Networking with Windows NT
- ☐ Visual Programming in C++
- ☐ Microcomputer Servicing
- ☐ Desktop Publishing with PageMaker
- ☐ Bookkeeping and Accounting
- ☐ Multimedia Programming
- ☐ Mastering Microsoft Office
- ☐ Webmaster Series

**GET YOUR DEGREE ONLINE!**
- AAS Degree in Accounting
- AAS Degree in Business Management

**Visit our Home Page at http://www.mhcec.com**

Name (please print) Age

Address

City/State/Zip

*A Division of The McGraw-Hill Companies*

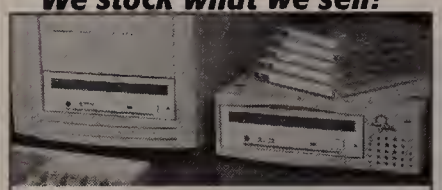
Accredited Member, Distance Education and Training Council

5497-0797

# DIRT CHEAP DRIVES

# 1-800-637-4743

***Celebrating our 10th year!***
***Low Low Prices!***
***We stock what we sell!***



**BEST BUY CD RECORDERS**
**TOLL FREE SUPPORT**
**5 FREE DISKS**

**2x6 SCSI CD ROM RECORDER**
• Packet write compatible, tray loading

| | |
|---|---|
| Drive Kit | $379 |
| Complete Kit with ISA controller | $419 |
| Complete Kit with PCI controller | $489 |

**4x6 SCSI CD ROM RECORDER**
• Packet write compatible, tray Loading

| | |
|---|---|
| Drive Kit | $699 |
| Complete Kit with ISA controller | $739 |
| Complete Kit with PCI controller | $809 |

**2x8 IDE CD ROM RECORDER**
• Packet write compatible, tray Loading

| | |
|---|---|
| Drive Kit | $409 |
| Complete Kit with ISA controller | $439 |

**NEW 2x6 SCSI CD ReWritable!**
• CD-R and CD-RW compatible
• Includes 5 rewritable disks

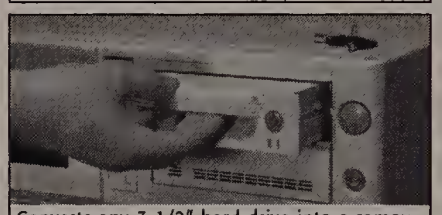
| | |
|---|---|
| Drive Kit | $699 |
| Complete Kit with ISA controller | $739 |
| Complete Kit with PCI controller | $809 |

(Drive kit - requires controller)

***We will not be undersold on CD media!***

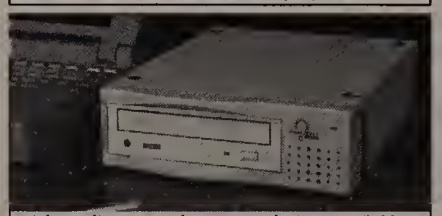
| | Alone | with CDR |
|---|---|---|
| ***CDR-74*** (with jewel case) | | |
| 5 pack (CDR74-5) | $32 | $29 |
| 20 pack (CDR74-20) | $105 | $101 |
| 50 pack (CDR74-50) | $235 | $230 |
| 100 pack (CDR74-100) | $459 | $449 |
| ***CDR-74*** (no jewel case) | | |
| 50 disk spindle (CDR74S-50) | $225 | $220 |
| ***CDR-74W*** (ReWritable) | | |
| 5 pack (CDR74W-5) | $145 | $135 |
| 20 pack (CDR74W-20) | $525 | $515 |
| 50 pack (CDR74W-50) | $1229 | $1209 |

Call for larger quantity pricing



Converts any 3 1/2" hard drive into a removable drive. Great for transportability, data interchange, or security needs. Mount any 3.5" IDE or SCSI drive in the supplied cartridge, and the frame in a 5.25" drive bay in your computer and you are ready for transportability. Extremely high quality construction. Features built in cooling fan, 5CSI ID switch.

| | | Extra frame | Extra cartridge |
|---|---|---|---|
| **IDE** | **$79** | **$49** | **$39** |
| **SCSI** | **$85** | **$54** | **$40** |
| **WIDE SCSI** | **$129** | **$75** | **$64** |
| **Weather resistant cartridge carrying case** | | | **$30** |



High quality external storage solutions available in parallel or PCMCIA (type 2) interface.

| Hard Drive | Parallel | PCMCIA |
|---|---|---|
| 1.6GB | $319 | $419 |
| 2.5GB | $369 | $469 |
| 3GB | $439 | $539 |
| 3.8GB | $479 | $579 |
| 5GB | $599 | $699 |
| CD ROM | | |
| 12X | $259 | $359 |
| 16X | $299 | $399 |

## 1Gig JAZ SALE

Internal 5CSI with 1 disk $295
External 5C5I in our case with 1 disk $359
External 5CSI in Iomega case with 1 disk $386
Disks Qty 2-4/5-9/10+ $87/$85/$82

iomega

## IDE HARD DRIVES

| IDE | RPM | Brand | Model | Price |
|---|---|---|---|---|
| 1000MB | 4103 | JT5 | JT51000 | $162 |
| 1200MB | 5400 | Fujitsu | M1636T | $179 |
| 1275MB | 4500 | Seagate | ST31276A | $185 |
| 1280MB | 4500 | Quantum | TM312B0A | $1B6 |
| 12B1MB | 5200 | Western Digital | AC11200 | $181 |
| 1300MB | 4200 | JTS | JTS1300 | $169 |
| 1624MB | 5200 | Western Digital | AC21600 | $199 |
| 1670M8 | 44B0 | Maxtor | MB1750A | $195 |
| **1700MB** | **5400** | **Fujitsu** | **M1623T** | **$188** |
| 1700MB | 4500 | Seagate | ST31720A | $190 |
| 2100MB | 4103 | JTS | JTS2000 | $1BB |
| 2100MB | 5400 | Fujitsu | M1624T | $217 |
| 2100MB | 5200 | Western Digital | AC22100 | $209 |
| 2132MB | 4500 | Seagate | ST32132A | $203 |
| 2151MB | 5400 | Quantum | FB32160A | $221 |
| 2168MB | 4500 | Quantum | TM32160A | $219 |
| 2187MB | 4480 | Maxtor | MB21B7A | $21B |
| 2500MB | 3600 | Quantum | BF2500A | $215 |
| **2500MB** | **5400** | **Fujitsu** | **M1638T** | **$215** |
| 2559MB | 5200 | Western Digital | AC22500 | $226 |
| 2560MB | 5400 | 5eagate | ST52520A | $219 |
| 2560MB | 5400 | Maxtor | M82560A | $219 |
| 2564MB | 4500 | Quantum | TM32550A | $245 |
| 3166MB | 5200 | Western Digital | AC33100 | $24B |
| 3216MB | 4500 | Quantu | TM33200A | $273 |
| 322BMB | 5400 | Quantum | FB33240A | $270 |
| 3245MB | 4500 | 5eagate | 5T33240A | $27B |
| 3500MB | 4480 | Maxtor | M83500A | $297 |
| **3860MB** | **4500** | **Quantum** | **TM33840A** | **$308** |
| 4000MB | 5200 | Western Digital | AC34000 | $322 |
| 4310MB | 5400 | Quantum | FB34320A | $365 |
| 4326MB | 4500 | 5eagate | 5T34340A | $Call |
| 4335MB | 3600 | Quantum | BF4335A | $249 |
| **5120MB** | **5400** | **Maxtor** | **M85120A** | **$405** |
| 6448MB | 5400 | Quantum | FB36480A | $535 |
| 6450MB | 5400 | Seagate | ST56450A | $Call |
| 6510MB | 3600 | Quantum | BF6510A | $369 |

## SCSI HARD DRIVES

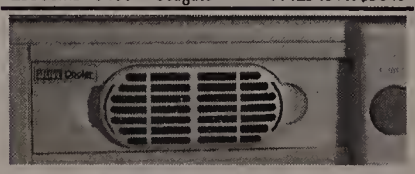
*Add an Adaptec A2940Ukit PCI Ultra SCSI controller $249*

| SCSI | RPM | Brand | Model | Price |
|---|---|---|---|---|
| 1050MB | 5400 | Seagate | ST31055N | $275 |
| 1280MB | 4500 | Quantum | TM31280S | $229 |
| 2110MB | 4500 | Quantum | TM32110S | $297 |
| 2150MB | 5400 | Seagate | ST52160N | $355 |
| 2150MB | 7200 | Seagate | 5T32171N | $548 |
| 2151MB | 5400 | Quantum | FB32160S | $330 |
| 3228MB | 5400 | Quantum | FB33240S | $3B0 |
| 3254MB | 4500 | Quantum | TM332005 | $348 |
| **4100MB** | **7200** | **Micropolis** | **MC4341** | **$699** |
| 4310MB | 5400 | Quantum | FB34320S | $479 |
| 4350MB | 7200 | 5eagate | 5T34371N | $B35 |
| 4400MB | 7200 | Fujitsu | M2954S | $729 |
| 4550MB | 7200 | Micropolis | MC4345 | $729 |
| 4550MB | 7200 | Micropolis | MC4345AV | $819 |
| 4550MB | 7200 | Quantum | XP345505 | $809 |
| 4550MB | 10,000 | 5eagate | 5T34501N | $1049 |
| 6448MB | 5400 | Quantum | FB36480S | $599 |
| **9100MB** | **7200** | **Micropolis** | **MC3391** | **$1239** |
| 9100MB | 7200 | Fujitsu | M2949S | $1269 |
| 9100MB | 7200 | Quantum | XP39100S | $1329 |
| 9100MB | 7200 | Micropolis | MC3391AV | $1339 |
| 9100MB | 7200 | Seagate | ST19171N | $16B9 |
| 9100MB | 10,000 | 5eagate | 5T19101N | $3379 |
| 23300MB | 5400 | Seagate | ST423451N | $3809 |

## WIDE HARD DRIVES

*Add an Adaptec A2940UWKit PCI Ultra SCSI controller $280*

| WIDE | RPM | Brand | Model | Price |
|---|---|---|---|---|
| 1050MB | 5411 | 5eagate | 5T31055W | $349 |
| 2149MB | 5411 | Seagate | ST32155W | $497 |
| 2150MB | 7200 | 5eagate | 5T32171W | $599 |
| **4294MB** | **7200** | **Micropolis** | **MC3243W** | **$729** |
| 4294MB | 7200 | Micropolis | MC3243WAV | $789 |
| 4350MB | 7200 | Seagate | ST34371W | $899 |
| 4400MB | 7200 | Fujitsu | M2954W | $749 |
| 4550MB | 7200 | Micropolis | MC4345W | $789 |
| 4550MB | 7200 | Micropolis | MC4345WAV | $849 |
| 4550MB | 7200 | Quantum | XP34550W | $839 |
| 4550MB | 10,000 | 5eagate | ST34501W | $1109 |
| **9091MB** | **5400** | **Micropolis** | **MC3391W** | **$1299** |
| 9091MB | 5400 | Micropolis | MC3391WAV | $1399 |
| 9100MB | 7200 | Fujitsu | M2949W | $1309 |
| 9100MB | 7200 | Quantum | XP39100W | $1359 |
| 9100MB | 7200 | Seagate | ST19171W | $17B9 |
| 9100MB | 10,000 | 5eagate | 5T19101W | $3479 |
| 23300MB | 5400 | Seagate | 5T423451W | $3849 |



***Hard Drive Cooling Fan*** Mounts in a 5 1/4 half height drive bay. Compatible with any 3 1/2" hard drive. Features twin cooling fans and a washable air filter. A must for 7200 and 10,000 RPM drives (CHDFAN) $30

## CD ROM DRIVES

***IDE CD ROM***

| 5peed | Brand | Model | ms | Int |
|---|---|---|---|---|
| 8X | Mitsumi | CRMCFX800 | 150 | $91 |
| 12X | Mitsumi | CRMCFX12X | 150 | $110 |
| 12X | Toshiba | XM5702B | 115 | $104 |
| 16X | Lite On | LTN262A | 120 | $105 |
| 16X | Mitsumi | CRMCFX16X | 120 | $111 |
| 16X | Acer | AC706A | 120 | $109 |
| 16X | NEC | CDR1600 | 100 | $125 |
| 16X | Toshiba | XM6002B | 90 | $125 |
| 18X | Acer | AC616A | 120 | $135 |

***IDE CD CHANGERS***

| 5peed | Brand | Model | # Disks | Int |
|---|---|---|---|---|
| 6X | NEC | CDR4X6 | 4 | $99 |
| 8X | NEC | CDR4X8 | 4 | $139 |

***ACCESSORIES***

Buy a CD drive & sound card & get a FREE audio cable.
Creative Labs 5ound Blaster 16 Value PnP (5BIDE) $99
Creative Labs 5ound Blaster AWE64 (SB64AWE) $1B0
Creative Labs Sound Blaster AWE64 (SB64AWEGOLD) $220
Professional speakers with Bose style swivel speakers and separate subwoofer.
25 Watt (5PEAKERJR) $99 35 Watt (5PEAKERPRO) $129
Universal sound cable(AUDIOMIX) $9
Turn any IDE CD ROM into an external for parallel printer port (PPCASECD) $99
Turn any IDE CD ROM into an external for PCMCIA port (PCMCIACASECD) $189

***SCSI CD ROM***

| Speed | Brand | Model | ms | Int |
|---|---|---|---|---|
| 12X | Toshiba | XM5701B | 115 | $169 |
| 12X | Plextor | PX12TS(tray) | 105 | $219 |
| 12X | Plextor | PX12C5(caddy) | 105 | $269 |
| 15X | Toshiba | XM3801B | 99 | $219 |
| 16X | NEC | CDR1610 | 100 | $199 |
| 20X | Plextor | PX20TSE | 95 | $239 |

***SCSI CD CHANGERS***

| 5peed | Brand | Model | # Disks | |
|---|---|---|---|---|
| 8X | Nakamichi | MJ48S | 4 | $229 |
| 4X | Pioneer | DRM624X | 6 | $399 |

***SCSI CD TOWERS***

| | | | 4 Drive | 7 Drive |
|---|---|---|---|---|
| 12X | Toshiba | 115ms | $1029 | $1799 |
| 12X | Plextor | 105ms | $1329 | $2299 |
| 15X | Toshiba | 99ms | $1399 | $2429 |
| 16X | NEC | 100ms | $1199 | $1999 |
| 20X | Plextor | 95ms | $1499 | $2599 |

***SCSI CD TOWERS w/ 4 Disc Changers***
Nakamichi 8X 150ms $1199 $2099

## CD RECORDERS

***Sony 2x6***
Internal SCSI drive (CDU9265) $339

***Yamaha 4x6***
Internal SCSI drive tray load (YCDR400T) $639
Internal SCSI drive caddy load (YCDR400) $649

***Philips 2x6*** ($200 Philips rebate until 6/30/97)
Complete kit includes software, controller, and 1 disk
Internal 5CSI (CDD2600) $670

***Hewlett Packard SureStor 6020I***
SureStor 6020I includes software, and 1 disk
Internal SCSI (C4343CDR) $450
Complete internal kit w/ controller (C4343CDR-1) $499
External for parallel printer port (C4345A) $569

***Sony 2x8***
Internal IDE (CDU928S) $369
Kit w/ 1 disk, and software compatible with Win 95 & Win NT 3.51 & up. Req IDE controller. (CDU9285KIT) $409

***Mitsumi 2x6***
IDE Kit includes 3 disks, and software compatible with Win 95 & Win NT 3.51 and up. Requires IDE controller.
Internal (CRMC2600TE) $499

## OTHER HARD DRIVES

***2 1/2" IDE***

| | | | | |
|---|---|---|---|---|
| 10B0MB | 4200 | Toshiba | MK1002MAV | $239 |
| 1400MB | 4200 | Toshiba | MK1401MAV | $299 |
| 2160MB | 4200 | Toshiba | MK2103MAV | $439 |
| 30B0MB | 4200 | Toshiba | MK3303MAV | $679 |

***SCA*** *Single Connector Attachment*

| | | | | |
|---|---|---|---|---|
| 2150MB | 7200 | Seagate | 5T32171WC | $699 |
| 4350MB | 7200 | Seagate | 5T34371WC | $999 |
| 4550MB | 10,000 | 5eagate | 5T34501WC | $1179 |
| 9100MB | 7200 | Seagate | ST19171WC | $1859 |
| 9100MB | 10,000 | Seagate | 5T19101WC | $3629 |

***FC-AL*** *Fibre Channel - Arbitrated Loop*

| | | | | |
|---|---|---|---|---|
| 4550MB | 7200 | Seagate | ST34572FC | $Call |
| 4550MB | 10,000 | Seagate | 5T19171FC | $1229 |
| 9100MB | 7200 | Seagate | ST19171FC | $2199 |
| 9100M8 | 10,000 | Seagate | 5T19101FC | $Call |

***We also stock:*** IDE and SCSI controllers, Media for all drives, Backup software, CDR mastering and encription software, CD Duplicators, CD Towers, Jukeboxes (CD, CDR, tape, optical), RAID controllers and cases, Drive Cases, CD Labeling systems, plus much more.

***We also:*** Install any of these drives in external enclosures, and custom configure to your specifications.

## TAPE DRIVES

***EXABYTE***

| | | |
|---|---|---|
| 3.5-7Gig | 8mm, 32MB/min, EXBB205XL | $1209 |
| 7-14Gig | 8mm, 120MB/min, ELIANTB20 | $1579 |
| 7-14Gig | 8mm, 60MB/min, EXBB700LT | $735 |
| 7-14Gig | 8mm, 60MB/min, EXBB700 | $1069 |
| (EXB8700 includes: 1 tape, 1 deaning tape, and backup software) | | |
| 20-40Gig | 8mm, 360MB/min, EXB8900 | $4329 |
| 70-140Gig | 8mm, 60MB/min, EXB10H | $4279 |

***HEWLETT PACKARD***

| | | |
|---|---|---|
| 2Gig | DAT, 11MB/min, C1534AI | $589 |
| 2-4Gig | DAT-DC, 42MB/min, C1536AI | $629 |
| 4-8Gig | DD5-2 DAT, 60MB/min, C1599AI | $949 |
| 12-24Gig | DDS-3 DAT, 120MB/min, C1554AI | $1399 |
| 72-144GB | DDS-3 DAT, 120MB/min, C5648A | $3099 |

***SEAGATE***

| | | |
|---|---|---|
| 2-4Gig | DAT-DC, 4BMB/min, C4324RP | $629 |
| 4Gig | Mini, 29MB/min, T5T8000 | $339 |
| 4-BGig | DDS-2 DAT, 4BMB/min, C4326NP | $759 |
| 48-96Gig | DD5-2 DAT, 48MB/min, C4586NP | $1999 |

***SEAGATE MINI CART***
Prices include Dos/Win backup software & 1 tape

| | | | |
|---|---|---|---|
| 800MB | TR1, TSTB00R $125 | Parallel ver | $155 |
| 3.2Gig | TR3, TST3200 $195 | Parallel ver | $225 |
| 4-8Gig | TR4, TST8000 IDE or 5CSI | | $349 |

***SONY***

| | | |
|---|---|---|
| 4-8Gig | DD5-2 DAT, 44MB/min, SDT5000AI | $7B9 |
| 4-BGig | DDS-2 DAT, 90MB/min, SDT7000AI | $B69 |
| 12-24Gig | DDS-3 DAT, 144MB/min, SDT9000AI | $1129 |
| 32-64Gig | DD5-2 DAT, 90MB/min, TSL7000X | $2159 |

***QUANTUM***

| | | |
|---|---|---|
| 15-30Gig | DLT, 150MB/min, DLT2000XT | $2799 |
| 20-40Gig | DLT, 1B0MB/min, DLT4000 | $4269 |
| 75-150Gig | DLT loader, 150MB/min, DLT2500XT | $5149 |
| 100-200Gig | DLT loader, 180MB/min, DLT4500 | $7259 |
| 105-210Gig | DLT loader, 150MB/min, DLT2700XT | $7299 |
| 140-280Gig | DLT loader, 180MB/min, DLT4700 | $8999 |

## REMOVABLE DRIVES

***IOMEGA 100MB ZIP***

| | |
|---|---|
| Internal SCSI for PC (ZIP100I) | $148 |
| Internal IDE for PC (ZIP100A) | $148 |
| External SCSI for PC or Mac (ZIP100) | $148 |
| External for PC parallel port (PPZIP100) | $148 |
| 100MB disks (ZIP100C) Qty 2-9/Qty 10+ | $18/$14 |

***IOMEGA 1Gig JAZ***

| | |
|---|---|
| Internal SCSI with 1 disk (JAZI) | $295 |
| External 5CSI in our case with 1 disk (JAZEX) | $359 |
| External SCSI in Iomega case with 1 disk (JAZX) | $386 |
| Disks Qty 2-4/5-9/10+ 1Gig | $87/$85/$82 |

***SYQUEST 230MB Flyer***

| | |
|---|---|
| Ext. 5CSI (EZ230S) | $239 |
| Ext Parallel(EZ230PP) | $239 |
| Extra Disks Qty 2-4/5-9/10+ | $30/$26/$24 |

***SYQUEST 1.5GB SyJet***

| | |
|---|---|
| Int. SCSI (SYJET1.5PCI) | $389 |
| Ext 5CSI (5YJET1.5PCX) | $489 |
| Extra Disks Qty 2-4/5-9/10+ | $100/$99/$98 |

***NEW HOT DRIVE NOMAI 750MB $CALL***

## OPTICAL DRIVES

***FUJITSU***
**230MB** •128MB compatible, 30ms, 3600rpm
Internal IDE w/ 1 free disk (M2541AC) $299
**640MB** • 230MB r/w & 128MB read compatible, 2MB buffer
Internal SCSI w/ 1 free disk (M2513A2WC) $439

***MAXOPTIX***
**2.6Gig** • (1.3Gig, 650MB r/w compatible) , 1MB buffer
Internal SCSI (TAHITI2.6) $1569

***TORAY***
**650MB** • PD drive 650MB rewritable and 4X CD ROM in one.
SCSI Kit w/ controller & 1 disk Int (PWK650) $299

***SMART STORAGE SOLUTIONS***
**4.6Gig** •2.6Gig compatible, 19ms,
Internal 5CSI & 1 disk (5S54.6WC) $1449

***Optical Disks*** (LIFETIME WARRANTY) 2-4/5-9/10+

| | | | | |
|---|---|---|---|---|
| 128MB | [TJ128] | $20 | $16 | $14 |
| 230MB | [TJ230] | $20 | $16 | $14 |
| 540MB 3 1/2" | [TJ540] | $37 | $33 | $31 |
| 640MB 3 1/2" | [TJ640] | $38 | $34 | $32 |
| 1.2GB 512K | [TJ1.2] | $51 | $47 | $45 |
| 1.3GB 1024K | [TJ1.3] | $51 | $47 | $45 |
| 2.3GB 512K | [TJ2.3] | $69 | $65 | $63 |
| 2.6GB 1024K | [TJ2.6] | $69 | $65 | $63 |

**M- F 8am - 8pm, Sat 9am - 3pm CST**
**24hr ordering at www.dirtcheapdrives.com**

VISA MasterCard

**We are a major supplier to Government, Educational, Fortune 1000, and Institutions. PO's and Blds accepted.**

**DIRT CHEAP DRIVES**
3716 Timber Drive, Dickinson, Texas 77539
Local (281) 534-4140 - Fax (281) 534-6452

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging. Defaced items may not be returnable. All returns are subject to a restocking fee. No refunds on software or special orders (items not listed in ad.) We reserve the right to refuse any sale. Personal checks held for clearance.

7/97 PC World

Circle 147 on reader service card

**CDW** COMPUTER DISCOUNT WAREHOUSE

**The right price.**
**The right advice.**

# "Get more"™

## AST

**Ascentia P30, P50**
8MB $109.20 72097 — 16MB $166.94 72098
**Ascentia J50**
8MB $82.65 68811 — 16MB $139.38 68809
32MB $249.30 68810

## Cisco Systems

**Router 3500, 2500 series**
8MB $98.18 77730 — 16MB $139.22 77731

## COMPAQ

**Armada 1120**
8MB $68.07 71879 — 16MB $125.02 71880
**Armada 4110 series, 4120 series, 4130 series**
8MB $83.36 74915 — 16MB $149.31 74917
32MB $278.09 74918
**Deskpro 2000, 4000, 6000**
8MB $63.54 74165 — 16MB $129.54 74166
32MB $239.76 74167
**LTE Elite 5000 series**
8MB $86.83 62465 — 16MB $149.31 62466
32MB $269.76 62467 — 64MB $577.66 62468
**Prolinea 2500**
32MB $279.41 79833 — 64MB $904.25 79834
128MB $1229.41 79835
**Prolinea 5000, 5000R**
64MB $589.94 71875 — 128MB $1064.45 71876
256MB $3666.06 71877 — 512MB $4838.72 71878
**Presario 962, 9536, 9546, 9548, 972, 982, 974, 992, Prolinea P75, P90**
8MB $67.17 54679 — 16MB $108.36 54680
32MB $228.15 54682 — 64MB $474.54 54681
**Presario 7200 series**
8MB $59.48 68815 — 16MB $125.02 68812
32MB $235.94 68813 — 64MB $409.06 68814

## FUJITSU

**LifeBook 555TX, 655TX, 635T**
8MB $73.29 83130 — 16MB $129.32 80765
32MB $396.60 80426

## GATEWAY 2000

**STG-Pent/P5-75, 90, 100, 120, 133, 150, 166 Family PC, P5-100, 120, 133, 150, 166 BestBuy**
8MB $65.77 57571 — 16MB $125.02 57572
32MB $234.57 57573 — 64MB $459.91 57575
**Solo V75 Deluxe, V90, S90, S90 Deluxe, S90 BestBuy, Solo 2100**
8MB $134.96 62795

## HEWLETT® PACKARD

**LaserJet 4 Plus, 4M Plus, 4MV, 4V, 5MP, 5P, 5si MX, 6P, 6MP**
4MB $33.58 43306 — 8MB $62.97 42443
**LaserJet 4, 4M**
4MB $46.88 32151 — 8MB $88.91 32568
**LaserJet 4si, 4si MX**
4MB $41.48 43307 — 8MB $89.60 37583

## HITACHI

**MX series, 133T, 150T, 166T**
8MB $99.61 85193 — 16MB $159.87 85195

## IBM

**PC 300 model 330, 340, PC 700 model 730, 750 A, E, N, B, F, P**
8MB $65.77 74840 — 16MB $125.02 72593
32MB $219.30 72594
**ThinkPad 365E, 365ED**
16MB $129.19 63579
**ThinkPad 365, X, XD series, 560, 760 E, ED, EL, ELD**
8MB $79.57 69680 — 16MB $129.32 69704
32MB $289.06 71913

## IBM

**ThinkPad 340, 345C, CS, 355, 360C, CS, P, 755, CS, CE, CD, CV, CX**
4MB $65.77 42715 — 8MB $97.24 42716
16MB $159.98 42717
**ThinkPad 750, 750 C series, P**
8MB $149.31 35181 — 16MB $184.47 35182
32MB $309.68 43310

## NEC

**Versa 6000, 6030 series, 6050 series**
8MB $109.91 71586 — 16MB $159.24 71583
32MB $279.41 71584
**Versa 2000 series**
8MB $66.47 44184 — 16MB $129.88 44186
**Versa 2400**
8MB $65.51 76394 — 16MB $127.80 76396
**Versa 2600**
8MB $104.20 85753 — 16MB $174.91 85754
32MB $309.35 85755 — 64MB $709.94 85756
**Versa 4000 series, E, V, M, P**
4MB $81.26 30555 — 8MB $91.69 30557
12MB $138.01 43231 — 16MB $149.31 31342
20MB $189.31 43040 — 32MB $275.15 43041
**Versa 6200MX, NT**
16MB $147.89 85186 — 32MB $279.41 85192

## Texas Instruments

**Extensa 450 series, 550 series, 560 series, 570 series**
8MB $71.54 59865 — 16MB $127.80 59866
**Extensa 510, 515**
8MB $79.20 72130 — 16MB $129.91 72134
32MB $249.30 72136
**TravelMate 5000 series, 5300**
8MB $118.63 68609 — 16MB $169.69 68608
8MB piggyback module $97.94 68610

## TOSHIBA

**Dynapad T200, T200CS**
8MB $81.97 31508 — 16MB $148.47 33132
**Equium 5160D, 5200D, 6200D**
8MB $65.06 87226 — 16MB $119.64 87227
**Infinia 7130, 7160, 7200**
8MB $86.19 76190 — 16MB $106.73 76191
**Portege 650, 660, CDT, Tecra 500, 510 series, 730 series and 740 series**
8MB $87.52 72535 — 16MB $129.54 72534
**Portege 610, Tecra 710,720, 730 series, Satellite Pro 200, 420, 430 series**
8MB $79.95 67892 — 16MB $164.60 67893
32MB $299.36 67894
**Satellite 100, 105, Satellite Pro 400, 410 series**
8MB $97.24 63086 — 16MB $149.68 63087
32MB $289.98 61117
**Satellite 110, 115, 200CDS, Satellite Pro 430CDT, 430CDS**
8MB $79.95 67892 — 16MB $164.60 87893
32MB $299.36 67894
**T2100, T2150**
4MB $53.99 52810 — 8MB $77.79 52811
16MB $136.65 52812 — 24MB $204.57 52813
**Tecra 510CDT, 510CDS**
8MB $87.52 72535 — 16MB $129.54 72534
32MB $304.70 74695

## STANDARD MEMORY

**Standard Memory 72-pin, non-parity, 70ns**
4MB (1x32) $36.34 47603 — 8MB (2x32) $63.67 47604
32MB (8x32) $195.01 47295 — 64MB (4x32) $464.99 62988

EDO memory same price as standard non-parity.

Simple Technology memory upgrades are recognized and approved by leading computer manufacturers, including:

Microsoft Windows Compatible · Mac OS · Digital — Simple Technology DEC Workstations memory upgrades

*If you don't see it, call CDW® carries Simple Technology's complete line of 1500 memory upgrade products for portables, workstations, servers, printers, desktop systems, PDAs and more. Memory pricing subject to change—please call your CDW account manager for the latest pricing and availability information.*

# Simple® TECHNOLOGY

## Memory Upgrades

**Every Simple Technology product is tested for 100% compatibility and is backed with a lifetime warranty.**

LIFETIME WARRANTY · INDIVIDUALLY TESTED 100% COMPATIBLE

Each Simple Technology removable hard drive is pre-formatted with Ontrack Disk Manager (software included). Data transfer rate: 16.6Mbps. Guaranteed for one full year.

| Model | Hard drive capacity 1.44GB | 2.1GB | 3.08GB |
|---|---|---|---|
| IBM ThinkPad 355, 360, 750, 755 | $457.29 87497 | $618.23 71582 | $759.18 88867 |
| IBM ThinkPad 760, C, CD, L, LD | $529.55 87498 | $716.28 85087 | — |
| Toshiba T4700, T4800, T4850 | $389.46 87501 | — | — |
| Toshiba T700, T710, T720 | $389.46 87502 | $564.08 71588 | $768.49 89072 |
| NCR Safari 3181 4/50, 3182 4/75 | $439.30 87499 | $608.07 71587 | $735.56 88869 |
| AT&T Globalyst 250 | $449.58 87500 | $608.07 71587 | $735.56 88869 |
| NEC Versa 2000, 4000 | $449.58 87500 | $579.88 82845 | — |
| NEC UltraLite, Versa E, V, M, P | $439.30 87499 | $608.07 71587 | $735.56 88869 |
| Compaq LTE 5000, 5100, 5200, 5300, 5400 | $438.01 87496 | — | $759.18 88865 |

## *Digital "Film" for Your Digital Camera*

**Compact Card (FLASH)**
4MB Memory $104.18 72849
8MB Memory $149.85 81022
Flash card adapter $26.59 72851
Linear Flash available upon request

**ATA Flash PC Cards**
8MB ATA Memory $138.65 66560
16MB ATA Memory $259.30 66563
20MB ATA Memory $319.34 66565
4MB, 12MB, 40MB available

Compatible with these digital cameras: Kodak DC-50, Nikon E2, Nikon E2S, Fujix 505, Fujix 515, Fujix 440 in 4MB-20MB capacities.

TECH SUPPORT 1-800-367-7330 x4 · WORLDWIDE WEB http://www.simpletech.com · FAX ON-DEMAND 1-800-429-5626 x500

**CDW® sells for less and services you better!™** **800-865-4239**

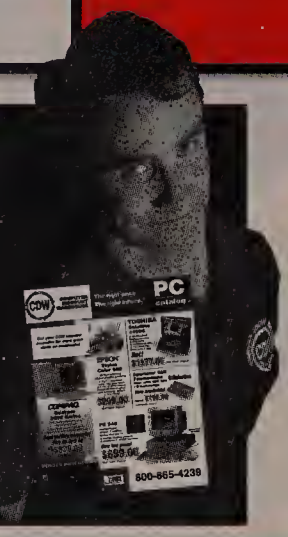
COMPUTER DISCOUNT WAREHOUSE™

**COMPUTER DISCOUNT WAREHOUSE**

**The right price.**
**The right advice.**

# We offer you

"Get more than just a great price. Call today and get a little empathy, some free advice and a free CDW catalog."



## IBM PC 300GL Series

***A perfect combination of price and performance***

- Intel Pentium or Pentium MMX processors
- 256KB pipeline burst Level 2 cache
- SDRAM memory
- Expansion slots: one PCI, one ISA, two shared PCI/ISA
- Four bays (two available)
- Two USB ports
- 1-year, on-site limited warranty, 3 years parts

**NEW!**

Monitor sold separately

***As low as!***

**$1196.42**
CDW 85191

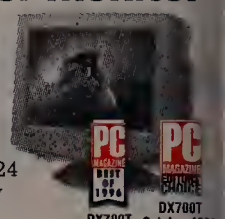
## MAG INNOVISION DX700T color monitor

***Advanced Trinitron® CRT technology***

Designed for Microsoft Windows 95

- 17" Trinitron® CRT monitor, 16" viewable image size
- 0.25mm aperture grille
- Maximum resolution: 1280 x 1024 at 65Hz
- 3-year limited warranty

**$659.80** CDW 74594



DX700T — DX700T October 1996

**DJ530** **$339.63** CDW 79015
- 15" flat square technology CRT, 13.9" viewable image size
- 0.28mm dot pitch
- Maximum resolution: 1280 x 1024 at 65Hz

## Hardware, Software & Peripherals at DISCOUNT Prices!

### NETWORKING PRODUCTS

**Microsoft**

**Windows NT Server V4.0**
Upg + 5-client license CD ..... 346.98
Upg + 10-client license CD ..... 479.85
Comp upg + 5-client license CD ..... 346.98
Comp upg + 10-client license CD ..... 489.10
Server + 5-client license CD ..... 695.98
Server + 10-client license CD ..... 999.96
Single-client license upg ..... 16.98
Single-client license ..... 33.98
**Windows NT Workstation V4.0**
Version upg CD ..... 129.53
Single-client upg ..... 239.98
Full version CD ..... 279.87

**Novell**

**IntranetWare**
5-user CD ..... 704.14
10-user CD ..... 1316.20
25-user CD ..... 2309.55
50-user CD ..... 3119.90
***Call for Novell IntranetWare upgrades.***
**IntranetWare for Small Business**
1-user additional license ..... 46.64
5-user additional license ..... 216.83
Server with 5 licenses ..... 594.80
***Call for additional Novell IntranetWare multi-user configurations.***

**3Com**

3ComImpact IQ ISDN modem external .. 309.13
3C900 EtherLink XL PCI 10BT ..... 109.16
3C900 Ethernet XL PCI combo ..... 129.85
3C905 Fast EtherLink XL PCI 10/100BT .. 95.90
OfficeConnect 8-port hub ..... 119.35
SuperStack II Hub 12-port 10BT ..... 506.02
SuperStack II Hub 24-port 10BT ..... 866.77

**adaptec**

2940U PCI UltraSCSI Kit ..... 246.36
2940UW PCI Ultra Wide SCSI Master ... 289.22

**Cisco Systems**

MicroWeb 100 server ..... 799.40
Catalyst 1900 24-port 10BT 2-port 100BT .. 2896.15
Catalyst 1900 24-port 10BT 1-port 100BT 1-port 100FX ..... 3289.78

**COMPAQ**

Netelligent 10BT PCI controller ..... 91.85
Netelligent 10/100BTX PCI controller ..... 99.78

**Dayna**

CommuniCard 33.6 data/fax modem ..... 189.27
CommuniCard PLUS 10BT/33.6 Ethernet/modem . 344.76

**Hummingbird Communications Ltd.**

NFS Maestro V5.1.3 WIN/95/NT/DOS ... 229.18
Exceed V5.1.3 WIN/95/NT ..... 319.94

**intel**

EtherExpress PRO 100 PCI ..... 81.46
EtherExpress PRO/10+ PCI combo ..... 118.59
NetPortExpress PRO Ethernet internal .. 264.30
NetPortExpress PRO Ethernet external . 379.39

**LINKSYS**

Combo Ether16 LAN card ..... 35.53
Combo EtherPCI LAN card ..... 65.70
Combo PC/Ethernet card 10BT ..... 91.93
EtherFast 4-port 100BT stackable hub .. 244.78
10BT 5-port workgroup hub ..... 52.15

**NETGEAR**

10/100 Fast Ethernet PCI adapter ..... 53.01
EN104 4-port 10BT slimline Ethernet hub . 73.56
EN108 8-port 10BT slimline Ethernet hub . 99.55
FE104 4-port 100BT Fast Ethernet hub .. 188.58
FE108 8-port 100BT Fast Ethernet hub .. 359.88

**SMC®**

EtherEZ 5T 10BT hub ..... 83.84
EtherEZ 8TC 10BT hub ..... 129.83
EtherEZ 16TC 10BT hub ..... 279.88
EtherEZ 10BT ISA ..... 92.82
EtherPower 10/100BTX PCI ..... 72.08

### DATA STORAGE

**iomega**

Zip drive 100MB parallel ..... 149.95
Zip drive 100MB external SCSI ..... 149.95
Zip drive 100MB internal SCSI ..... 149.95
Ditto Easy 800MB Travan internal ..... 99.95
Ditto Easy 800MB Trevan external ..... 149.95
Jaz drive 1GB internal SCSI-2 ..... 299.95
Jaz drive 1GB external SCSI-2 ..... 399.95
Ditto drive 2GB internal ..... 149.95
Ditto drive 2GB external ..... 199.95
Ditto Dash Card ..... 59.95

**PHILIPS**

EasyWRITER CD recorder internal ..... 699.00
EasyWRITER CD recorder external ..... 799.00

**SyQuest**

EZFlyer 230MB external ..... 238.47
SyJet 1.5GB SCSI internal ..... 399.00
SyJet 1.5GB SCSI external ..... 499.00

### MULTIMEDIA

Creative Labs Sound Blaster AWE64 PnP .. 188.39
Creative Labs Sound Blaster Value CD 8X .. 225.38
Microsolutions 8X CD parallel ..... 278.80
NEC 8Xe 8X CD external SCSI-2 ..... 339.85
Panasonic portable 8X CD w/spkrs ..... 399.00
Yamaha YST-M15 10-watt speakers ..... 65.86
Yamaha 45-watt satellite/subwoofer ..... 169.84

### INPUT DEVICES

Adesso NU-Form keyboard/touchpad ..... 58.09
Alps GlidePoint Wave keyboard/touchpad 66.69
Alps GlidePoint Windows 95 keyboard ... 93.94
Calcomp Drawing Slate II 12x12 w/press pen ..... 306.63
Casio QV-300 digital camera ..... 655.65
Connectix Color QuickCam V2.0 ..... 225.09
Epson PhotoPC digital camera ..... 349.00
Epson PhotoPC 500 digital camera ..... 499.00
Epson ActionScanning System II ..... 315.68
Epson Expression 636 Exec scanner ... 799.00
Hewlett Packard ScanJet 5p ..... 378.68
Hewlett Packard ScanJet 4Cse ..... 799.00
Intel Smart Video Recorder III ..... 174.63
Kensington Mouse-in-a Box ..... 25.76
Kensington Expert Mouse V5.0 PS/2 ..... 91.77
Kodak DC50 Digital Science Camera ... 699.00
Logitech TrackMan Marble ..... 83.23
Logitech PageScan Color Pro ..... 268.81
Microtek PageWiz compact scanner ..... 97.88
Microtek ScanMaker E3 color flatbed ... 189.57
Microtek ScanMaker E6 std color flatbed .. 335.65
Nikon AX-110 Scantouch scanner ..... 286.26
Nikon Coolpix 100 digital camera ..... 506.47
Play Snappy video still capture ..... 195.97
Polaroid 2000/40 digital camera ..... 2877.79
Ricoh RDC-2 digital camera ..... 799.00
UMAX PageOffice Color scanner ..... 216.22
UMAX Astre 600S scanner ..... 235.65
UMAX Vista-S12 scanner ..... 629.55
Visioneer PaparPort mx scanner ..... 225.47
Visioneer PaperPort lx scanner ..... 169.89

### MONITORS

MAG Innovision 410V2 14" 0.28mm ..... 229.48
MAG Innovision 510V2 15" 0.28mm ..... 289.78
MAG Innovision 710V2 17" 0.28mm ..... 495.76
Magnavox MB4010 14" 0.28mm ..... 244.24
Magnavox MV5011 15" 0.28mm ..... 304.15
Magnavox MB7000 17" 0.28mm ..... 539.91
NEC XV15+ 15" 0.25mm ..... 375.29
NEC XV17+ 17" 0.28mm ..... 664.04
NEC P750 17" 0.25mm ..... 849.57
NEC P1150 21" 0.28mm ..... 1758.30
Princeton E050 15" 0.28mm ..... 289.76
Princeton E070 17" 0.28mm ..... 519.72
Sony Multiscan 100sx 15" PnP 0.25mm . 349.38
Sony Multiscan 100sf 15" PnP 0.25mm .. 394.36
Sony Multiscan 200sf 17" PnP 0.25mm .. 775.83
Sony Multiscan 300sf 20" PnP 0.30mm . 1565.46
ViewSonic E641 14" 0.28mm ..... 226.08
ViewSonic E655 15" 0.28mm ..... 318.48
ViewSonic PT775 17" 0.25mm ..... 839.87
ViewSonic P815 21" 0.25mm ..... 1584.94

### PROCESSOR UPGRADES

**intel**

**Pentium OverDrive Processors**
63MHz ..... 139.96
83MHz ..... 195.98
120/133MHz upg for 5/60, 5/66 ..... 189.28
125MHz upg for 5/75 ..... 259.37
**Pentium OverDrive Processors w/MMX Technology**
125MHz upg for 75MHz ..... 319.08
150MHz upg for 90MHz ..... 319.08
166MHz upg for 100MHz ..... 337.99

### PC CARDS

3Com LAN PC Card combo ..... 174.87
3Com 33.6 10BT LAN+modem ..... 308.24
3Com 33.6 10BT LAN+modem combo .. 339.79
Hayes ACCURA 336 ..... 159.60
Hayes OPTIMA 336 w/EZjack ..... 189.27
Hayes OPTIMA 56K ..... 207.04
Motorola Montana 33.6 ..... 179.20
Motorola Mariner 33.6 ..... 349.54
New Media PC Card joystick adapter ..... 57.30
Simple 33.6 cellular ..... 154.25
Simple 33.6 Communicator w/SimpleJack .. 177.81
U.S. Robotics Ethernet adapter w/XJACK . 109.00
U.S. Robotics 33.6 cellular ..... 239.00
U.S. Robotics 33.6 cellular w/XJACK ... 229.95
U.S. Robotics 33.6 w/XJACK ..... 219.00
Xircom 33.6 ..... 224.96
Xircom 33.6 Ethernet 10BT ..... 279.20
Xircom 33.6 Ethernet combo ..... 316.91

### MODEMS

**Hayes**

ACCURA 336 V.34 internal w/fax ..... 119.54
ACCURA 336 V.34 external w/fax ..... 137.60
OPTIMA 336 Business Modem internal .. 226.29
OPTIMA 336 Business Modem external . 236.48
ACCURA 56K internal ..... 139.13
ACCURA 56K external ..... 169.97
ACCURA 56K speakerphone internal ... 178.74
ACCURA 56K speakerphone external ... 196.04
OPTIMA 56K internal ..... 269.41
OPTIMA 56K external ..... 279.73
ACCURA ISDN ..... 249.45

**MOTOROLA**

ModemSURFR 56K internal ..... 149.24
ModemSURFR 56K external ..... 168.10
VoiceSURFR 56K internal ..... 168.10
VoiceSURFR 56K external ..... 186.23

**U.S. Robotics**

**Sportster Series**
Winmodem V.34 33.6 internal w/fax ..... 105.36
V.34 33.6 internal w/fax ..... 129.33
V.34 33.6 external w/fax ..... 159.90
Voice V.34 33.6 internal w/fax ..... 149.49
Voice V.34 33.6 external w/fax ..... 175.24
56K x2 internal ..... 199.99
56K x2 external ..... 219.99
56K x2 Voice internal ..... 219.99
56K x2 Voice external ..... 239.99
ISDN 128K terminal adaptar ..... 229.66
**Courier Series**
V.34 33.6 internal w/fax ..... 208.88
V.34 33.6 external w/fax ..... 239.57
56K internal ..... 237.78
56K external ..... 269.91
I-modem ISDN V.34 faxmodem external . 279.87
DataBurst ISDN U interface external ..... 205.49
DataBurst ISDN S/T interface external .. 236.48

**ZOOM**

33.6 voice/SVD internal ..... 98.23
ComStar 33.6 voice/SVD internal ..... 114.99
V 34I Plus 33.6 faxmodem internal ..... 88.65
V.34X Plus 33.6 faxmodem external ..... 117.49
56K internal ..... 139.13
56K external ..... 159.94

### PRINTERS

**brother**

HL-720 lesar ..... 349.81
HL-730 laser ..... 399.99
MFC-4550 5-in-1 ..... 799.99
MFC-6550mc 6-in-1 ..... 999.99

### PRINTERS

**Canon®**

BJ-30 monochrome ..... 269.38
BJC-70 ..... 297.28
BJC-240 ..... 179.00
BJC-620 ..... 399.00
BJC-4200 ..... 279.00
BJC-4550 ..... 499.00

**EPSON®**

FX870 ..... 289.45
LQ2070 ..... 379.04
LX300 ..... 166.92
Stylus Color 400 ..... 229.00
Stylus Color 600 ..... 299.00
Stylus Color 800 ..... 449.00
Stylus 1500 ..... 799.00
Stylus Pro XL color ..... 1499.00

**HEWLETT® PACKARD**

HP DeskJet 340 portable inkjet printer .. 269.37
HP DeskJet 672C color printer ..... 199.00
HP DeskJet 682C color printer ..... 268.74
HP DeskJet 694C color printer ..... 299.00
HP DeskJet 820Cse color printer ..... 299.00
HP LaserJet 5se printer ..... 1049.00
HP LaserJet 6MP printer ..... 878.45
HP OfficeJet 570 multi-function ..... 599.00

**LEXMARK.**

Color Jetprinter 1020 ..... 149.30
Color Jetprinter 2030 ..... 199.09
Color Jetprinter 2050 ..... 247.45
Color Jetprinter 2070 ..... 299.33
Color Jetprinter 7000 ..... 396.64
Optra E ..... 429.72
Optra Lx+ ..... 1849.57
Optra Lxn+ ..... 2229.78
Optra N ..... 2688.22
Optra R+ ..... 1255.23

### HARD DRIVES

**Quantum**

Fireball TM 1.2GB Fast ATA-2 ..... 199.51
Fireball TM 2.1GB Fast ATA-2 ..... 229.94
Fireball TM 3.2GB Fest ATA-2 ..... 289.13
Firebell TM 1.2GB Ultra SCSI-3 ..... 235.87
Fireball TM 2.1GB Ultre SCSI-3 ..... 319.61
Fireball TM 3.2GB Ultra SCSI-3 ..... 374.48

**Seagate**

631MB Fast ATA ..... 144.65
1.08GB Fest SCSI-2 ..... 269.09
1.2GB Fast ATA-2 ..... 205.92
2.1GB Fast ATA-2 ..... 236.77
2.1GB Fast SCSI-2 ..... 587.54
2GB Ultra SCSI-2 ..... 557.08
4.29GB Ultra SCSI ..... 967.69
9.1GB Fast SCSI-2 ..... 1777.71

**WESTERN DIGITAL**

Caviar 1.2GB EIDE ..... 219.10
Caviar 1.6GB EIDE ..... 215.18
Cavlar 2.1GB EIDE ..... 229.66
Cevlar 2.55GB EIDE ..... 249.65
Cavlar 3.1GB EIDE ..... 279.02

### UPS SYSTEMS

**APC**

Back-UPS Office ..... 199.95
Back-UPS Pro 280 PNP ..... 139.17
Back-UPS Pro 420 PNP ..... 229.25
Back-UPS Pro 650 PNP ..... 287.44
Smart-UPS 450NET ..... 299.41
Smart-UPS 700NET ..... 379.27
Smart-UPS 1000NET ..... 528.29
Smart-UPS v/s 650 ..... 307.34
Smart-UPS v/s 1000 ..... 429.36
Smart-UPS v/s 1400 ..... 565.45
SurgeArrest Personel ..... 16.25
SurgaArrest Profassional ..... 26.31
SurgeArrest Network ..... 29.45

**TripLite**

BC Internat 325 2 outlets RJ11 ..... 89.64
Supar 7 7 outlets ..... 15.28
IBAR 4 4 outlets ..... 38.33

**800-865-4239**

**$2.99 UPS ground shipping on all orders $200 or less!**

a rare sales tool.
it's called objectivity.

COREL

## WordPerfect Suite 8 For Windows 95 and NT

***Unleash your full productivity potential***

Updated applications offer a new level of responsiveness and performance while advanced Internet tools make publishing and presenting on the web a seamless process.

Upgrade, CD ..... **$115.03*** CDW 87888

CD ..... **$279.28** CDW 87887

*After $20 mail-in manufacturer rebate. Offer valid 6/1/97 through 7/1/98.

## ViewSonic® GT775

NEW!

✔ 17" Super Contrast flat screen, 16" viewable image size ✔ 0.25mm aperture grille ✔ Maximum resolution: 1600 x 1280; 1280 x 1024 at 80Hz ✔ 3-year limited warranty on CRT, parts and labor

**$717.81** CDW 85005

G771 **$578.35** CDW 88861 NEW!

✔ 17" Super Contrast screen, 16" viewable image size ✔ 0.27mm dot pitch ✔ Maximum resolution: 1280 x 1024; 1024 x 768 at 87Hz

U.S. Robotics — The Intelligent Choice in Information Access

## Sportster 56K Faxmodem

Includes: Sportster 56K Faxmodem*, RJ-11 phone cord, AC adapter (external), U.S. Robotics Connections™ CD-ROM with fax/communications software, Internet access software and more.

Internal ..... **$199.99** CDW 81423

External ..... **$219.99** CDW 81424

56K Voice Faxmodem, internal ..... **$219.99** CDW 85120

56K Voice Faxmodem, external ..... **$239.99** CDW 85121

*Sportster 56K Faxmodems are capable of 56K bps downloads, however, current regulations limit download speed to 53K bps.

**CDW® carries over 20,000 products! If you don't see it, Call!**

COMPUTER DISCOUNT WAREHOUSE™

COMPUTERS

## TOSHIBA

**Satellite & Satellite Pro Notebooks**
200CDS 5/100 8MB 810MB 11.3" dual 6X CD . 1299.63
420CDT 5/100 6MB 1.26GB 11.3" active 6X CD . . 1789.63
430CDS 5/120 16MB 1.2GB 11.3" dual 10X CD . . 1679.80
430CDT 5/120 16MB 1.2GB 11.3" active 10X CD . . 2279.16
**Portege Notebooks**
650CT 5/133 16MB 1.26GB 11.3" active . 3439.19
660CDT 5/150 16MB 1.2GB 11.3" active 6X CD . 4237.92
**Tecra Notebooks**
500CS 5/120 16MB 1.26GB 12.1" dual . 1439.65
500CDT 5/120 16MB 1.26GB 12.1" active 6X CD . . 2938.18
510CDT 5/133 16MB 2.1GB 12.1" active 10X CD . 3389.46
730CDT 5/150 16MB 2GB 12.1" active 6X CD . . . 4448.50
730XCDT 5/150 MMX 16MB
2GB 12.1" active 10X CD . . . . . 4659.93
740CDT 5/166 MMX 16MB
2GB 13.3" active 10X CD . . . . . 5728.94
**Infinia Mini-towers**
7161 5/166 MMX 32MB 2.38GB 12X CD . 1649.89
7201 5/200 MMX 32MB 3GB 12X CD . . 1989.24
**Equium Desktops**
5160D 5/166 MMX 32MB 2.1GB 12X CD . . 1769.12
5200D 5/200 MMX 32MB 2.5GB 12X CD . . 1967.76
6200D 5/200 MMX 32MB 3GB 12X CD . 2359.74
**Equium Mini-towers**
6200M 5/200 MMX 32MB 4.3GB 12X CD. . . 3248.21

## AST

**Ascentia Notebooks**
A41 5/120 16MB 1GB 11.3" dual 6X CD. . 2139.53
A42 5/120 16MB 1GB 12.1" active 6X CD . . 2669.88
A60 Plus 5/150 16MB 1.44GB
12.1" active 10X CD . . . . . 2819.71
A70 Plus 5/150 MMX 16MB
1.44GB 12.1" active 10X CD . . . . . 3279.85
J55 5/133 16MB 1GB 11.3" active . . . . . 2239.97
P50 5/133 8MB 800MB 11.3" active 4X CD. . 2119.38
P50 5/133 24MB 1GB 12.1" active 6X CD . . . 3664.09
P70 5/150 MMX 32MB 2.1GB 12.1" active . . 4019.66
P80 5/166 MMX 32MB 3GB 12.1" active. . 4479.66
**Bravo Desktops**
LC 5133 5/133 16MB 1.2GB . . . . . 968.17
LC 5166 5/166 16MB 1.2GB . . . . . 1129.53
MS 5100 5/100 16MB 1.2GB . . . . . 938.34
MS 5133 5/133 16MB 1.2GB . . . . . 1008.73
MS 5133 5/133 16MB 2.1GB . . . . . 1059.16
**Bravo Mini-towers**
MS-T 5100 5/100 16MB 2.1GB . . . . . 1079.18
MS-T 5133 5/133 16MB 1.2GB . . . . . 1049.69
MS-T 5133 5/133 16MB 2.1GB . . . . . 1089.33

## COMPAQ

**Armada Notebooks**
1120 5/100 8MB 810MB 10.4" dual . . . . . 999.00
1120T 5/100 8MB 810MB 10.4" active. . 1299.00
1130 5/120 16MB 1.08GB 10.4" dual. . . 1099.00
1130T 5/120 16MB 1.08GB 10.4" active . 1399.00
4110 5/100 8MB 810MB 11.3" dual . . . . 1199.00
4120 5/120 16MB 1.08GB 11.3" dual. . . 1299.00
4120T 5/120 16MB 1.08GB 11.8" active . 2499.00
4130T 5/133 16MB 1.08GB 11.8" active . 2699.00
4131T 5/133 16MB 1.4GB 12.1" active . 2999.00
**LTE 5000 Notebooks**
5280 5/120 16MB 1.35GB 11.3" active . 3399.00
5300 5/133 16MB 1.35GB 12.1" active . 3399.00
5380 5/133 16MB 2.16GB 12.1" active . 3699.00
5400 5/150 32MB 2.16GB 12.1" active . 3899.00
**Deskpro 2000 Desktops**
5133/1200 5/133 16MB 1.2GB. . . . . 1089.00
5133/2500 5/133 16MB 2.5GB. . . . . 1169.00
5166/1200 5/166 16MB 1.2GB. . . . . 1209.00
5166/2500 5/166 16MB 2.5GB. . . . . 1289.00
5200/2500 5/200 32MB 2.5GB. . . . . 1709.00
6180/1200/CD 6/180 16MB 1.2GB 8X CD. 1739.00
6180/2500/CD 6/180 32MB 2.5GB 8X CD . 1929.00
6200/2500/CD 6/200 16MB 2.5GB 8X CD . 2209.00

COMPUTERS

## COMPAQ

**Deskpro 2000 Mini-towers**
5133/2500/CD 5/133 16MB 2.5GB 8X CD . . 1309.00
5166/2500/CD 5/166 32MB 2.5GB 8X CD . . 1549.00
6200/2500/CD 6/200 32MB 2.5GB 8X CD . . 2329.00
**Deskpro 4000 Desktops**
5133/1620 5/133 16MB 1.62GB. . . . . 1269.00
5166/1620 5/166 16MB 1.62GB. . . . . 1399.00
5166/2500/LS 5/166 16MB 2.5GB . . . . . 1479.00
5200/2500/LS 5/200 32MB 2.5GB . . . . . 1899.00
6180/1620/CDS 6/180 32MB
1.62GB 8X CD . . . . . 2039.00
6180/2500/CDS/LS 6/180 32MB
2.5GB 8X CD . . . . . 2109.00
6200/2500/LS/CDS 6/200 32MB
2.5GB 8X CD . . . . . 2419.00
**Deskpro 4000 Mini-towers**
5133/1620/LS 5/133 32MB 1.62GB . . . . 1399.00
5166/2500/CDS 5/166 32MB 2.5GB 8X CD . 1789.00
**Deskpro 6000 Desktops**
5166/1080/CDS 5/166 16MB 1.08GB 8X CD. . 1589.00
5166/1080/CDS 5/166 32MB 1.08GB 8X CD . . . 1709.00
5200/2150/PDS 5/200 32MB 2.15GB PD-CD . 2679.00
6180/2150/CDS 6/180 32MB 2.15GB 8X CD . 2509.00
6200/2150/CDS 6/200 32MB 2.15GB 8X CD . 2819.00
6200/4200/CDS 6/200 32MB 4.2GB PD-CD . . 3219.00
**Deskpro 6000 Mini-towers**
5166/2150/CDS 5/166 32MB 2.15GB 8X CD. . . 2019.00
5166X/2150/PDS 5/166 MMX 32MB
2.1GB PD-CD. . . . . 2479.00
5200X/4200/PDS 5/200 MMX 32MB
4.2GB PD-CD. . . . . 3139.00
6200/4200/PDS 6/200 64MB 4.2GB PD-CD . . 3509.00
**Presario Desktops**
2100 133 24MB 2GB 8X CD . . . . . 999.00
4160 5/150 24MB 2.1GB 8X CD . . . . . 1299.00
3060 5/200 MMX 24MB 3.8GB
4-disc changer . . . . . 2999.00
4784 5/200 MMX 32MB 4.3GB 16X CD. 2199.00
8772 5/200 MMX 48MB 6.5GB 16X CD. 2599.00
**Presario Mini-towers**
4764 5/166 MMX 24MB 2.5GB 16X CD. 1699.00
4716 5/200 32MB 2.5GB 8X CD . . . . . 1999.00

## IBM

**ThinkPad Notebooks**
365X 5/120 8MB 810MB 10.4" active. . . 1269.61
365XD 5/120 8MB 810MB 10.4" active 4X CD. . 1369.64
365XD 5/120 8MB 1.08GB 10.4" active 6X CD. 1659.83
365X 5/133 8MB 1.08GB 11.3" dual . . . 1379.38
365XD 5/133 8MB 1.35GB 11.3" dual 6X CD. . 1967.76
365XD 5/133 8MB 1.35GB 11.3" active 6X CD . . 2569.92
380 5/150 16MB 1.08GB 12.1" dual. . . . 2169.96
380D 5/150 16MB 1.35GB 12.1" dual 8X CD. . 2468.38
380D 5/150 MMX 16MB 2.1GB
12.1" active 8X CD . . . . . 3846.33
560 5/100 8MB 810MB 11.3" dual . . . . . 1799.83
560 5/133 8MB 2.1GB 11.3" dual . . . . . 2429.56
560 5/133 8MB 2.1GB 12.1" active . . . . 4179.40
760ED 5/133 16MB 1.2GB 12.1" active 4X CD . . 4638.00
760ED 5/133 16MB 2.1GB 12.1" active 6X CD . 4467.80
760E 5/150 16MB 2.1GB 12.1" active . . 4079.71
760ELD 5/100 8MB 810MB 12.1" active 4X CD. . 4494.32
760EL 5/120 8MB 810MB 11.3" dual. . . 2298.27
760EL 5/120 8MB 1.35GB 11.3" dual . . 2289.84
760XD 5/166 MMX 32MB
3GB 12.1" active 8X CD . . . . . 6249.96
**Aptiva Desktops**
C33 5/133 16MB 1.6GB 8X CD . . . . . 999.96
C8E 5/166 MMX 32MB 3.1GB 16X CD. 1876.57
C9E 5/200 MMX 32MB 3.1GB 16X CD . 2099.00
S64 5/166 16MB 2.5GB 8X CD . . . . . 1299.83
S66 5/166 16MB 3.2GB 8X CD . . . . . 1399.93
S8C 5/166 MMX 32MB 3.1GB 16X . . . . 1999.00
S9C 5/200 MMX 32MB 4.2GB 16X . . . . 2499.00
**PC300 Series Desktops**
PC340 5/166 16MB 1.2GB 4 bays . . . . . 1269.92
PC350 5/133 16MB 1.2GB 5 bays . . . . . 1259.54
PC350 5/166 16MB 1.6GB 5 bays . . . . . 1589.34
PC350 5/166 MMX 16MB 2.5GB 5 bays. . 1868.69
PC350 5/200 MMX 32MB 2.5GB 5 bays. . 2157.74

COMPUTERS

## IBM

**PC300GL Series Desktops**
5/133 16MB 1.2GB . . . . . 1196.42
5/166 16MB 1.2GB. . . . . 1389.39
5/166 16MB 2.5GB. . . . . 1509.68
5/166 16MB 2.5GB 16X CD . . . . . 1795.08
**PC300XL Series Desktops**
233MHz Pentium II 32MB 2.5GB 16X CD. . 3374.25
233MHz Pentium II 32MB 2.5GB . . . . . 3069.51
266MHz Pentium II 32MB 4.2GB 16X CD. . 3848.56

## NEC

**Versa Notebooks**
2400 5/100 8MB 810MB 11.3" dual . . . . 1499.00
2530 5/133 16MB 1.08GB 12.1" dual. . . 1699.00
2630CD 5/133 16MB 1.44GB 12.1" dual 10X CD . . 1999.00
2650CD 5/150 MMX 16MB
1.44GB 12.1" dual 10X CD. . . . . 2499.00
2650CDT 5/150 MMX 16MB
1.44GB 12.1" active 10X CD . . . . . 3499.00
4230 5/133 8MB 1.08GB 10.4" active 6X CD . . 2899.00
6030H 5/133 16MB 1.35GB 12.1" active 6X CD . 3799.00
6030X 5/133 16MB 1.44GB 12.1" active 6X CD . 3999.00
6050MH 5/150 MMX 16MB
1.4GB 12.1" active 10X CD . . . . . 3999.00
6050MX 5/150 MMX 16MB
2.1GB 12.1" active 10X CD . . . . . 4699.00
6050NT 5/150 MMX 16MB
2.1GB 12.1" active 10X CD. . . . . 4899.00
6200MX 5/166 MMX 32MB 2.1GB 13.3" active
10X CD. . . . . 5699.00
6200NT 5/166 MMX 32MB 2.1GB 13.3" active
10X CD. . . . . 5899.00
**PowerMate Value Series Desktops**
V133e 5/133 16MB 1.2GB . . . . . 1058.00
V2133 5/133 16MB 1.6GB . . . . . 1175.00
V2133 5/133 16MB 2GB 8X CD. . . . . 1352.00
**PowerMate Value Mini-towers**
V2133 5/133 16MB 1.6GB . . . . . 1175.00
V2133 5/133 16MB 2GB 8X CD. . . . . 1352.00
**PowerMate Performance Desktops**
PMMX2166 5/166MMX 16MB 2GB . . . . 1528.00
PMMX2166 5/166 MMX 32MB 3GB 12X CD. . 1940.00
**PowerMate Performance Mini-towers**
PMMX2166 5/166 MMX 16MB 2GB. . . . 1528.00
**PowerMate Office Mini-towers**
2513 5/133 16MB 1.6GB 8X CD . . . . . 1822.00
2516 5/166 16MB 1.6GB 8X CD . . . . . 2058.00
2516 5/166 32MB 2.5GB 8X CD . . . . . 2528.00

## Texas Instruments

**Extensa Notebooks**
660CD 5/166 MMX 16MB
1.35GB 12.1" dual 10X CD. . . . . 2699.55
660CDT 5/166 MMX 16MB
2.1GB 11.3" active 10X CD . . . . . 3179.04
900 5/133 16MB 1.35GB 12.1" dual. . . . 2219.43
900T 5/133 16MB 1.35GB 11.3" active . 2529.68
900CDT 5/133 16MB 1.35GB 11.3" active 8X CD. . . 2989.39
**TravelMate Notebooks**
TM6020 5/120 8MB 1.08GB 11.3" active . 2147.22
TM6030 5/133 16MB 1.35GB 12.1" active . 2439.63
TM6050 5/150 16MB 1.35GB 12.1" active. . 3199.65
TM6050NT 5/150 32MB 2.1GB 12.1" active. . 3849.59
TM6160 5/166 MMX 32MB
2.1GB 12.1" active 10X CD . . . . . 4799.81
TM7060 5/166 MMX 32MB
2GB 12.1" active 10X CD. . . . . 4395.43
TM7062NT 5/166 MMX 32MB
3GB 12.1" active 10X CD. . . . . 5077.80

## HEWLETT® PACKARD

**HP OmniBook 800 Series Notebooks**
800CS 5/100 16MB 810MB 10" color . . 2469.29
800CT 5/133 16MB 1.44GB 10.4" color. 3236.67
**HP OmniBook 5500 Series Notebooks**
5/120 16MB 1.3GB 11.3" dual . . . . . 1709.37
5/120 16MB 1.3GB 10.4" active. . . . . 2339.88
5/133 16MB 1.3GB 12.1" active. . . . . 3236.67
5/133 16MB 2GB 12.1" active . . . . . 3506.40

COMPUTERS

## HEWLETT® PACKARD

**HP Vectra 520 Series Desktops**
520 5/133 16MB 1.2GB . . . . . 1059.05
520CD 5/133 16MB 1.2GB 8X CD . . . . . 1269.13
520MCx 5/133 16MB 1.2GB 8X CD. . . . 1419.64
520 5/166 16MB 1.2GB . . . . . 1225.94
520MCx 5/166 16MB 1.6GB 16X CD. . . 1689.89
**HP Vectra 525 Series Mini-towers**
525MCx 5/133 16MB 1.6GB 16X CD. . . 1569.75
525CD 5/166 16MB 1.6GB 16X CD. . . . 1579.55
525CDT 5/166 MMX 16MB 2.5GB 16X CD . . 1974.35
525MCx 5/166 MMX 24MB 2.5GB 16X CD . . 2029.87
525CD 5/200 MMX 24MB 2.5GB 16X CD . 2139.65
525MCx 5/200 MMX 32MB 2.5GB 16X CD . . 2627.63

## SONY

PCV-100 5/166 MMX 32MB 2.5GB 16X CD. . . 1999.99
PCV-120 5/200 MMX 32MB 3.8GB 16X CD . . 2199.99

## FUJITSU

**LifeBook 400 Notebooks**
420D 5/120 8MB 1GB 10X CD 11.3" dual . . . 1599.00
**LifeBook 500 Notebooks**
531T 5/133 16MB 1.3GB 10X CD 11.3" active. 2499.00
535T 5/133 16MB 2GB 10X CD 12.1" active . 2999.00
555Tx 5/150 MMX 16MB
2GB 10X CD 12.1" active. . . . . 3799.00
**LifeBook 600 Notebooks**
635T 5/133 16MB 1.3GB 12.1" active . . 3499.00
655Tx 5/150 MMX 16MB 1.3GB 12.1" active. . . 3999.00

## HITACHI

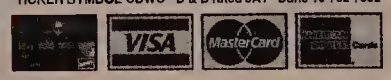
E133D 5/133 16MB 1GB 11.3" dual. . . . 1499.00
Mx133T 5/133 16MB 1.35GB 12.1" active 8X CD. . . 2999.00
Mx150T 5/150 16MB 2.1GB 12.1" dual 8X CD. . 4399.00
Mx166T 5/166 16MB 2.1GB 12.1" active 8X CD . 4999.00

## SAMSUNG ELECTRONICS

5/120 16MB 1.44GB 12.1" active . . . . . 2699.00
5/150 16MB 2.1GB 12.1" active 6X CD . 3799.00

**CDW® TELEPHONE HOURS**
Sales
Monday-Friday 7 a.m.-9 p.m. CT • Saturday 9 a.m.-5 p.m. CT
Tech Support for Customers
Monday-Friday 9 a.m.-9 p.m. CT • Saturday 9 a.m.-5 p.m. CT

**BUY WITH CONFIDENCE**
**CDW® IS A NASDAQ TRADED COMPANY**
TICKER SYMBOL CDWC D & B rated 5A1 Duns 10-762-7952




Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Freight is calculated as the carrier's actual freight charge plus insurance and packaging material. The cost of insurance is 0.35% (0.0035) of the order total. Packaging materials will not exceed $4.00 for single package shipments or $6.00 for multi-package shipments. Before returning any product, you must obtain an RMA number. Non-defective returns are subject to a restocking fee. Software, chips and other electronic components are not returnable. Allow 10 business days for shipping when paying by personal check. All pricing subject to change. For all prices, products and offers, CDW reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes, errors in advertisements or other extenuating circumstances. All trademarks and registered trademarks are the sole property of their respective owners.

**If you find a better price, call CDW® before you buy!**

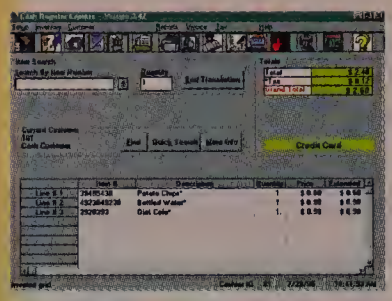
**800-865-4239**

©1997 CDW® Computer Centers, Inc. PC World 7/97 PCW3069C www.cdw.com

Circle 68 on reader service card

## Cash Register Express Software
*for Windows...$495*

Computerize any type of retail store using Cash Register Express for Windows. Computerization pays for itself, saving you thousands of dollars, giving you peace of mind, and making the best use of your time. Cash Register Express



has more than 250 of the most desired point of sale features to help you leapfrog past your competition by controlling costs, reducing errors and increasing efficiency.

## More Software for Your Retail Store

- Video Express
- Salon Express
- Auto Express
- RestaurantPro Express
- Barcode Express
- Label Works
- Inventory Track Express
- Credit Card Software
- All Single or Multiuser

All PC America Software requires Microsoft Windows. The software was written in Visual Basic using Microsoft Access Files. The source code is available.

# CASH REGISTER EXPRESS™

**More Profit!**

**More Sales!**

**More Customers!**

***Save Time, Reduce Theft, Speed Checkout, Increase Accuracy, Reduce Costs, Make Better Business Decisions by computerizing your Retail Store.***

**SYSTEMS START AT $495.**

**Barcode Scanners** ~~$495*~~
Metrologic, Symbol, NJCR, Percon, PSC

**Receipt Printers** ~~$299*~~
Star, Ithaca, Citizen, Epson

**Barcode Printers** ~~$799*~~
Cognitive Solutions Barcode Blas

**Pole Displays** ~~$289*~~
Logic Controls

**Portable Data Collectors** ~~$695*~~
American Microsystems AMS3000

**Cash Drawers** ~~$189*~~
MMF, Logic Controls, Indiana, APG

**Programmable Keypads** ~~$495*~~
Logic Controls, Cherry, Genovation

**Credit Card Readers** ~~$189*~~
Unitech, Mag-Tek

*All prices depend on make and model.

## Dealers Wanted!

Join our dealer program. It's **FREE**. It's the fastest way to make money...**AND** we make it **EASY**.

### MORE INFO?

- Call Toll Free 1-800-722-6374
- www.pcamerica.com
- Fax on Demand 1-914-267-3551

# 1-800-PC-AMERICA

Call Toll Free 1-800-722-6374
PH: 914-267-3500
FX: 914-267-3550

PC America
60 N. Harrison Ave.
Congers, NY 10920

Circle 195 on reader service card

# PC WORLD MARKETPLACE

**For Advertising Sales**

Eastern & Central Regions (203) 857-5101

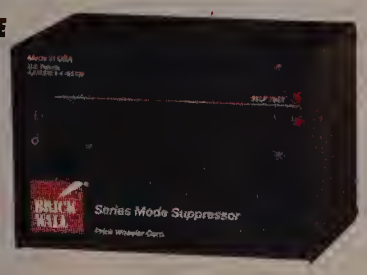
Pacific & Mountain Regions (203) 857-5102

# BRICK WALL®...
## THE WORLD'S BEST SURGE SUPPRESSOR

**#1 ALMOST ALL SURGE SUPPRESSORS EVENTUALLY FAIL.**

*Check out "Five things you don't know about your surge suppressor" at fivethings.com*

*Brick Wall products were initially engineered for critical non-fail industrial applications. They protect indefinitely and set a new standard for every measure of surge suppressor performance.*




*NO SURGE CURRENT LIMITATIONS, NO sacrificial components, NO surge diversion to ground, UNSURPASSED filtering, LOWEST clamping level/let-through voltage, INSTANTANEOUS clamping.*

**800-528-0313**

***How important is your system?***

**BRICK WALL** DIV., PRICE WHEELER CORP.

*E-mail: info@brickwall.com • Web: brickwall.com*

UL NO MOV'S

CIRCLE 456 ON READER SERVICE CARD

# Keep your PCs up & running with the 100% accurate fix...

1993 BYTE POURNELLE'S USER'S CHOICE AWARD

PC UPGRADE UTILITY OF THE MONTH

SERVICE NEWS PRODUCT OF THE MONTH

Windows 95 COMPATIBLE

GSA Approved

**Micro-Scope** is a universal PC diagnostic that runs a proprietary O/S which eliminates DOS limitations and inaccuracies. Version 6.16 adds 25 enhancements and includes: IDE low-level format, accurate IRQ conflict display, cache memory test, 64 meg video memory test, data recovery capabilities, virus capabilities and super-fast hard drive testing.

**Post-Probe** is a universal P.O.S.T. (Power-On Self-Test) reader card for the "dead" PC. Post-Probe includes: MCA adapter, tri-state logic probe, 13 LED pre-POST test, 2-digit POST code display and a manual with a full explanation of the manufacturer POST codes down to the exact device or chip failure.

**Micro 2000, Inc.**
1100 E. Broadway, 3rd Floor
Glendale, CA 91205
Toll Free 1 (800) 864-8008
Fax (818) 547-0397
**http://www.micro2000.com**

*Professional Diagnostics from*

Award Winning MICRO 2000™

CIRCLE 457 ON READER SERVICE CARD

# The Power to be Efficient

**AMERICAN MICROSYSTEMS, LTD**

**800 648 4452**

FAX 817 685 6232 • WWW.AMLTD.COM

2190 Regal Parkway • Euless, Texas 76040

**Call Now for a Free Catalog!**

Lifetime toll-free support • 13 years in business

Thorough quality control

Same-day shipping • Made in the USA

Laser Packages

**SPECIAL DEALER PRICING AVAILABLE!**

WE ALSO OFFER SPECIAL VOLUME PRICING. CALL FOR DETAILS

# Retail Accounting Solution!

PCW 3/97

MicroBiz AUTOMATE YOUR BUSINESS

*The worlds best selling Point-of-Sale solution that gives you more money, more control and more flexibility.*

**See for yourself how effectively MicroBiz software can manage your retail business**

- ✓ Accurate Inventory Control
- ✓ Defined Customer Tracking
- ✓ Complete Invoicing
- ✓ xBase File Structure
- ✓ Multiple Language Support
- ✓ Create Mailing Lists
- ✓ Detailed Receipt Generation
- ✓ Hardware Solutions Too
- ✓ Includes Report Builder Module

## Special Versions For:

- ✓ Auto Repair
- ✓ Dry Cleaning
- ✓ Video Tape Rental
- ✓ Liquor Store
- ✓ Hair Salon
- ✓ All Retail & Service Businesses

FROM $695.00

MICROBIZ "Easiest to Use" ...Computer Reseller News November 7, 1994 SOFTWARE

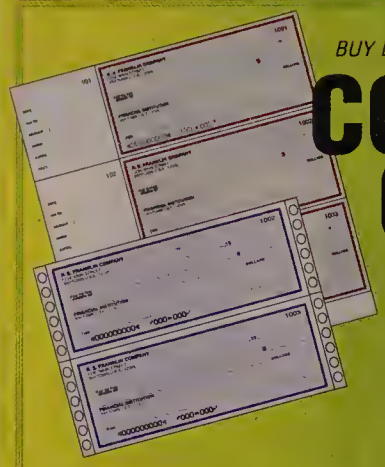
MicroBiz offers the easiest to use Point-of-Sale software solutions for retail and service businesses. Over 100,000 Businesses have automated with our software. Our software is powerful, flexible and uses industry standard xbase files, so you can create your own reports. Our data can be merged with Excel, Word, and other industry standard products. Call for a demonstration copy of our software or download it from the web. Single or Multi-user or multi-store solutions.

Call for our ***FREE*** catalog... **800-637-8268**

Resellers Welcome! Call **800-SELL-POS**

**777 Corporate Drive ◆ Mahwah, NJ 07430**
**Phone: 201-512-0900 FAX: 201-512-1919**
**Visit our Home Page at: www.microbiz.com**

CIRCLE 403 ON READER SERVICE CARD



BUY DESIGNER DIRECT FOR LOWEST PRICES!

# COMPUTER CHECKS

AS LOW AS

$29.95

*Plus One* **FREE** *"Check Saver" With Every Order*
(For Partial Check Sheets or Aligning Continuous Feed Checks)

**www.hotnew.com/checks**
**CALL: 1-800-239-4087**
**FAX ORDERS: 1-800-774-1118** (PLEASE CALL FOR A FAX ORDER FORM)
E-MAIL: INFO@CHECKS.HOTNEW.COM
MC, VISA & AMERICAN EXPRESS ACCEPTED

LASER AND CONTINUOUS FEED CHECKS AVAILABLE IN:
- BUSINESS SIZE
- BUSINESS SIZE WITH VOUCHER
- WALLET SIZE

Available in Quantities of 250, 500, 1000 and 2000. Choose From 4 Stylish Colors!

Classic Green | Prestige | Tan | Classic Blue

QUICKEN
SIMPLY MONEY
MICROSOFT MONEY
MANAGING YOUR MONEY
QUICKBOOKS
& MANY MORE

Designer™ CHECKS
P.O. Box 9100 • Anniston • AL 36202-9100

P05P04C6 • PC WORLD

CIRCLE 474 ON READER SERVICE CARD

# Get Direct Access to 150,000 Key Management Buyers!

Mailed six times a year, PC World Action Cards are a uniquely effective card deck advertising program delivering 150,000 PC-proficient managers who buy direct and have bought a PC-related product within the last 90 days via Direct Response. 60% of them receive no other card deck! Frequency discounts are available to advertisers in PC World's Marketplace Advertising section.

**PC WORLD ACTION CARDS**

50 Washington Street, Norwalk, CT 06854-2710

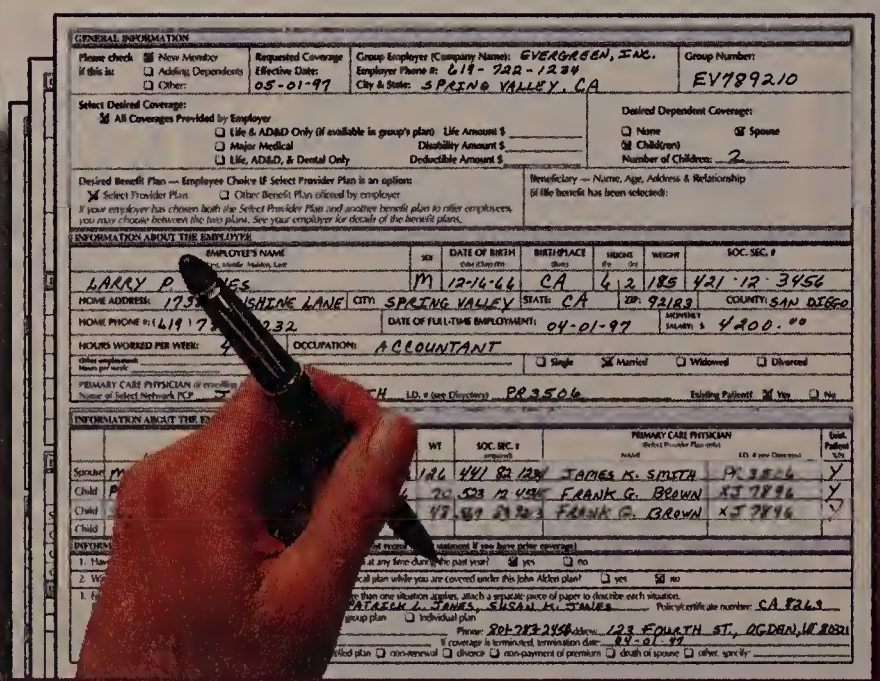
*For more information, call*
(Eastern U.S.) 203-857-5101
(Western U.S.) 203-857-5102

SURVEYS • SALES ORDERS • TIME CARDS • REGISTRATIONS • INSURANCE CLAIMS • PATIENT HISTORY • CREDIT APPLICATIONS

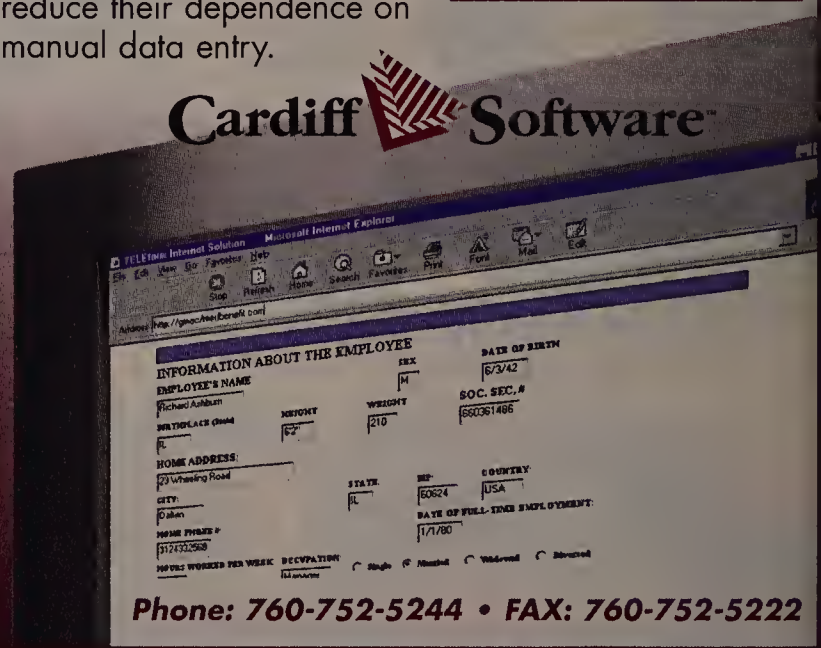
# AUTOMATED DATA ENTRY
## *Any Form...Every Format!*

If your company enters information into a database, you need **TELE***form*, the data collection solution. **TELE***form* reads hand print from any form. It reads any data type from faxed, scanned, or even Internet-based forms. The **TELE***form* family of products can handle your forms processing needs, whether its a hundred or tens of thousands of forms each day. Create a form, print it, fax it, post it on your Web site. One form in any format, paper or electronic. Thousands of companies use **TELE***form's* data collection server and robust recognition capabilities to reduce their dependence on manual data entry.

**Find out more about TELE*form*, your Total Data Collection Solution.**
**Toll Free**
**888.254.8915**
**www.cardiffsw.com**



Cardiff Software™



*Phone: 760-752-5244 • FAX: 760-752-5222*

EMPLOYMENT APPLICATIONS • TESTS AND EVALUATIONS • WARRANTY CARDS • READER RESPONSE

CIRCLE 440 ON READER SERVICE CARD

# MEMORY SUPERSOURCE

# 1-800-457-6937

# WEB SITE: http://www.worldwidetechnologies.com

SEE OUR COMPLETE LINE OF COMPUTER PRODUCTS

# NOTEBOOK BATTERIES

## NOTEBOOK BATTERIES

ABC 386SX NB, NB486SX/C/25
Acer Acerframe 350, 350C
Acer Acerframe 120, 160 & 280 series
Acer Acerframe 120, 160 & 280 series
Acer Acerframe 750 series, Lite
Acer Anywhere 386
Acer Aspireline 1100,X 386SX, 1120NB
Acer Aspireline Notebook
Acer 386SX/25NB
Acoubat 386SX/25
Acumate 325SL
ASI Travel Pro
Alfa 386SX NB
ALR NB, Venturi
Altech 386SX/20 NB, 3300SX
Altima 386SX, 486SLC, 420, 433D
Altima 486SLC
Altima 486SLC2, 386SX/20
Altima RSX 386SX/16 NB
Altos NB
Amax E2 Lite 16
Ambra SN433, SN433G, SN8550C
Ambra SN433, SN433C, SN8600C
Ambra NC425, NC425SL
Amstrad Megastar
AMS 5300NB
AMS 5320NB
AMS SoloPro P54
Amrel 486SX/25, 486SLC
Amrel 486SX/25, MLT386SXE
Amstrad 486SX/25
Apple Duo 200, 270+, 2300 series
Apple Duo 200, 270+, 2300 series
Apple Powerbook
Apple Mac Powerbook 140-160
Apple Mac Powerbook 190 & 5200 series
Apple Mac Powerbook 520 & 540 series
Apple Mac Powerbook 1400
Apple Stylewriter Portable Printer
Arche 486NB
Arche Tech NP-101 NP-102 386NB
Ares NB,386SX
Arima A1220/40, ATC 386SX
Arima NB
ARM Patriot, TS30M, TS30P
ASI Euphoria
ASI A Series
ASI Advantage NBSX20, NBSX25C
ASI Advantage Explorer 486SX/25, 486DX4/100
ASI Advantage Explorer 486SX/25
ASI Ascentia 700N, 800, 810N
ASI Ascentia 900N, 910N, 950N
ASI Bravo NB, Powerbook series
ASI Precisionbook Series
ASI Powerbook 100, 140, 396-12
ASI Tablet NX20, 3170
ASI A & T Safari 3180, 3181, 3182
Attache NV-385
Austin NB
Austin 386SX NB
Austin 486DX2/66
Avec NB
Avec 1535, 25, 486SX/25 NB
Avec 1535, 25, 486SX/25 NB
BCC Avanti 433NB, 433C, 433C, 425M, 486STN
BCC Avanti 433NB, 433C, 425, 425M, 486STN
Blackjack 386SX/20
BMC 420-4000 NB
Bona 386SX
Bona 386SX, 386SX/20
Bondwell 911SX, 386NB, 486NV
Bondwell 486NC, 486NC (old)
Bondwell 910/910V, 910A, 910A, Pro 87
Bondwell 931CV, 9-310SX
Brother HL-1000 Portable Printer
BSR Cyber Vue
BTC 5500, SuperLite 386SX/16
BTC 5500A NB
Innovabook 150, 150C
Innovabook 1000, 1100 series
Innovabook 450CS-100
Innovabook 386
Innova 486/25/120
Innova 486/25/120
Innova 486/25/120
NB (K225/225)
Notebook Supplies 10C
Notebook Computer Notebook PC
Notebook NB
Canon BJ-10, BJ Portable Printer (K10068)
Chaplet LA 25, LA50 Notebook NB
Chaplet LA 5040, NBA 386SX, NBC
Chicony NB-5200
Chicony NB5620, NB5625, 386SX
Chicony NB 5600
Citizen PN 49 printer, Notebk Printer II
CMS NB386SX/25
Commax NB386SX, SmartBook
Commodore Ultrathin 386SX
Commodore Notebook
Compaq SC320A
Compaq Contura 1000, 1120, 1125
Compaq Concerto
Compaq Contura Aero series
Compaq Contura 4/25, 4/25, series
Compaq Contura 3/20, 3/25, 3/25 series
Compaq Contura 400, 410, 420 & 430 series
Compaq Elite Lite series, LTE, LTE/286
Compaq LTE 5000, 5100, 5200
Compaq Presario
Compaq Presario, SLT386SX/20
Compaq 286, 316DX, 320NX, 316SL
Compaq 325TX, 425TX, 425CL
Compaq 425TX, 425SX
Compaq 425TX, NB25SL, NB25SXL
Compaq Contura 3/20, 3/25
Compaq Contura 400, 410, 420 & 430 series
Compaq Elite Lite series, LTE, LTE/286
Compaq LTE 5000, 5100, 5200
Compaq Presario
Compaq Contura, SLT386SX/20
Compaq 286, 316DX, 320NX, 316SL
Compaq Concerto
Compaq Contura Aero series
Compaq Contura 4/25, 4/25, series
Compaq Contura 3/20, 3/25, 3/25 series

# COMP-U-PLUS Direct

*Your Friend in the Industry*

Visit our Web Site @ compuplus.com

- 30 day money back guarantee
- All items brand new factory fresh with complete manufacturers warranties
- Same day shipping
- Nationally advertised lowest on-line prices
- MC, VISA & AMEX – no extra charge

CALL TOLL FREE **800-287-2323**

20 Robert Pitt Drive, Monsey, NY

NEW HOURS: MON-THURS 8:30- 9PM EST

SUN 10 AM-6 PM, MON-THURS 8:30 AM-9, FRI 8:30AM-5:30 PM EST

Friendly, Courteous and Knowledgeable salespeople always available to help you. Look and Compare. We have the LOWEST PRICES and BEST SERVICE in PC WORLD MAGAZINE.

## CD ROMS

Toshiba 5602B 8 Speed (IDE) .....67
Toshiba 5702B 12x (IDE) .....79
NEW! Toshiba 6002B 16x (IDE) .....91
NEW! Toshiba 5701B 12x SCSI .....129
NEW! Toshiba 3801B 15x SCSI .....177
TEAC 8 Speed IDE (58E) .....69
TEAC 12 Speed IDE (512E) .....89
NEW! TEAC 516E 16 speed IDE .....109
NEW! TEAC 516-S 16 speed SCSI .....144
Plextor Twelveplex 12x Int SCSI .....189
NEW! Plextor 20x SCSI CD-ROM .....229
Samsung 12 Speed CD Rom .....77
Mitsumi 8 Spd IDE (FX800) .....69
Mitsumi 12x IDE (FX1200) .....79
NEW! Mitsumi 16x IDE (FX1600) .....88
NEW! Sony 611E 16x (IDE) .....99
NEW! Acer 18x (IDE) CD-Rom .....92
NEW! Hitachi 16x IDE .....89
Nakamichi 8x SCSI 4-Disc Changer ....177

## SOUND CARDS

Creative Labs 16 IDE PNP .....42
Creative Labs 32 IDE PNP .....SPECIAL 72
Diamond Tech. 16 IDE PNP Sound Card ...19
NEW! AWE 64 Value (Retail Box) .....88
Special Creative Labs AWE 64 PNP Retail. 129
Special Creative Labs AWE 64 GOLD Retail .171

## RECORDABLE CD-ROMS

NEW! Panasonic 8x4 Kit .....519
Panasonic 4x2 Kit w/Adaptec 1520 card .379
NEW! Sony 926 6x2 Complete Kit .....325

## FAX MODEMS

US Robotics 33.6 Win/Modem Int. .....47*
US Robotics 33.6 Fax Mod Int (V.34) ....71*
US Robotics 33.6 Fax Mod. Ext. (V.34) ..93*
US Robotics 33.6 Voice (Duplex) Int. ...88*
US Robotics 33.6 Voice (Duplx) Ext. ...114*
NEW US Robotics X2 Fax Modem (56k) Int. ..155
NEW US Robotics X2 Fax Modem (56k) Ext. .172
NEW US Robotics X2 F/M (56k) Int. w/voice .171
NEW US Robotics X2 F/M (56k) Ext.. w/voice. 188
US Robotics 14.4 Fax Modem Int. only ..41
NEW! LOWER PRICE! US Rob. 128K ISDN Int. .207
Cardinal 33.6 Fax Modem Int./Ext. .65*/105*
Supra 33.6 F/M Pn'P w/Voice Int. .....59
Practical Periph. 33.6 F/M Int./Ext. ..74*/84*
Hayes Accura 33.6 F/M Int/Ext .....81*/99*

## NETWORKING & PERIPHERALS

3 COM 3C 509/590 Combo Card .....72/93
Microsoft Mouse 2.0 Serial or PS2 .....21
LogiTech Trackman Marble .....55
Mitsumi Windows 95 104 key keyboard .....12
Microsoft Natural keyboard .....55
Logitech Mouseman Combo (Ser./PS2) .....22

## ADAPTEC SCSI CARDS

1505 ISA/SCSI Kit .....37
2940 SCSI Kit .....161
2940 Ultra SCSI Kit (PCI) .....171
2940 Ultra Wide SCSI Kit .....207

## PCI VIDEO CARDS

Diamond Stealth 3D 2000 2MB EDO Ram ...59
Diamond Stealth 3D 2000 4MB EDO Ram ..79
Diamond Stealth 3D 3000 2MB V Ram .....109
Diamond Stealth 3D 3000 4MB V Ram .....149
NEW Diamond Monster 3D .....162
Matrox Mystique 2MB SG Ram .....89
Matrox Mystique 4MB SG Ram .....115
Matrox Millenium 2MB V Ram .....129
Matrox Millenium 4MB V Ram .....164
ATI 3D Xpression PC2TV 2MB .....113
ATI 3D Xpression PC2TV /4MB .....133
ATI 3D Pro Turbo PC2TV 4MB .....159
ATI 3D Pro Turbo PC2TV 8MB .....199
NEW! ATI All-In-Wonder 2MB/4MB.....219/243
NEW! ATI TV Tuner .....94

*ATTENTION: WEST COAST CUSTOMERS:*
**ORDERS ARRIVE OVERNIGHT OR SECOND DAY**
***LOW, LOW $$$$$***

## TAPE BACKUPS

HP Colorado DJ-35 "350MB" Internal .....55
HP Colorado T1000 "800MB" Int. FREE TAPE .....95
HP Colorado T1000 "800MB" Ext. FREE TAPE .....133
NEW! HP Colorado T3000 3.2 GIG FREE TAPE .....162
NEW! HP T4000 SCSI 4/8 GIG Int/Ext FREE TAPE .329/418
Seagate T*800MB/3200MB Int FREE TAPE ....85/149
Seagate T3200 3.2 GIG IDE Ext.....167
Seagate T8000 8 GIG Int/Ext FREE TAPE .....323/403

## IDE/SCSI HARD DRIVES

Seagate 3540A (546 MB) .....119
Seagate 3630A (635MB) .....130
Seagate 3850 (850MB) "State of the Art" .....148
Seagate 31276A .....168
Seagate 31720A (1.7 MB) .....177
Seagate 32120A (2 GIG) IDE .....185
Seagate 52520A (2.5 GIG) IDE .....199
Seagate 51080N 1.1 GIG SCSI-2 .....229
Western Digital Caviar 2850 (850MB) IDE .....145
NEW! Western Digital CAVIAR 21200 (1.2 GIG) ....163
Western Digital CAVIAR 21600 (1.6 GIG) IDE .....173
NEW!Western Digital CAVIAR 22100 (2.1 GIG) ....192
NEW!Western Digital Caviar 32500 (2.5 GIG) .....202
NEW!Western Digital Caviar 33100 3.1 GIG IDE ....229
NEW! Western Digital Caviar 34000 4.1 GIG IDE ....305
Fujitsu M 1636 (1.2 GIG) IDE (fast 10ms) .....165
Fujitsu M 1623 (1.7 GIG) IDE (fast 10ms) .....176
Fujitsu M 1624 (2.1 GIG) IDE (fast 10ms) .....185
Fujitsu M 1638 (2.5 GIG) IDE (fast 10ms) .....199
Maxtor 71336 AV (1.3 GIG) IDE .....168
NEW! Maxtor 81750A (1.7 GIG) .....177
Maxtor 72004AP (2.1 GIG) .....189
NEW! Maxtor 82560A (2.5 GIG) .....199
NEW! Maxtor 83500AP (3.5 GIG) IDE .....259
NEW! Maxtor 84000 (4.0 GIG) IDE .....295
NEW! Maxtor 85120A (5.1 GIG) IDE .....369
Mitsumi Floppy 1.4/1.2 .....19/39
TEAC 1.4/1.2 Floppies .....20/39
SONY 1.4 Floppy .....21

• CODs, m/o or cashier chk only. Sorry P.O.'s w/ pre-payment only • Shipping, handling & insurance additional • Friendly, courteous and knowledgeable salespeople • Alternate 800 number 800-287-8786 • Dealers and bulk orders please call 914-352-8100 • RMA with auth. only. No restocking fee first 30 days. Prices may fluctuate due to availability. • For tech support & customer service 10AM-5PM E.S.T. call 914-352-8100 * Price after rebate

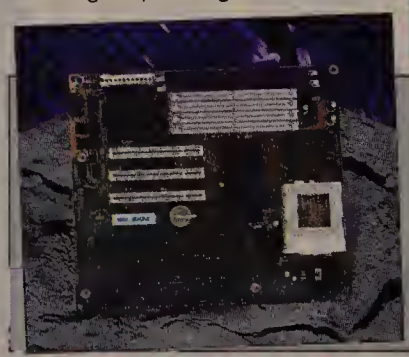
CIRCLE 464 ON READER SERVICE CARD

# The Finest PC Circuit Boards!!!

HSB COMPUTER LABORATORIES

the nation's largest full-line PC circuit board specific manufacturer and distributor caters to individuals and businesses interested in only the finest hardware and service at the best price, provided by a long term, financially stable company. For over a decade, we at HSB have earned our standing as the most reputable circuit board manufacturer and distributor in the industry. Don't make the mistake of buying 'Throw-Away' circuit boards from a company without any long term commitment to your satisfaction. If we sound like what you're looking for, please give us a call at...

**(800) 497-0401**



**HSB 64-Bit AT and ATX MainBoards**

Our MainBoards are the finest on the market, designed from the ground up to compete head-to-head with the most expensive and sophisticated designs available. Whether you're thinking of upgrading your existing system, or building a new one from scratch, you can't go wrong with HSB...

## WE MAKE YOUR BUYING DECISIONS EASY!!!

**With HSB you'll receive:**

- ☑ Circuit boards proven to be the best in the business. No exceptions and no excuses. Our boards outperform and outlast all challengers...
- ☑ A full 2 to 5 year circuit board warranty paired with a limited lifetime warranty on all 'Turbo' SIMM's, DIMM's and CPU's. Furthermore, we've always provided our customers with a full 60 day 100% money-back guarantee and no restocking charges...
- ☑ Free technical support and a non-commissioned sales staff. No one makes it easier to buy and install your componentry than HSB. Even our owner's manuals are the best you'll find anywhere...

*Please call 800-497-0401 for up to the minute pricing, or to receive your free color catalog!*

IN OVER A DECADE, HSB HAS NEVER BEEN BEATEN ON PRICE. IF YOU HAPPEN TO COME ACROSS A BETTER PRICE ON A COMPARABLE PRODUCT, WE'LL BEAT IT. NO QUESTIONS ASKED...

34208 Aurora Road #297, Cleveland, OH 44139 216-498-1356 [Local] 216-498-1374 [Fax]

# BASON HARD DRIVE WAREHOUSE

### 3.5" Hard Drives

| | | | |
|---|---|---|---|
| 100MB | Conner CP3100 | SCSI | $45 |
| 730MB | NEC 3825 | IDE | $155 |
| 840MB | WD 2850 | IDE | $159 |
| 1.0GB | DEC 3105 | SCSI | $169 |
| 1.0GB | Quantum 31070S | SCSI | $229 |
| 1.0GB | Samsung 310820 | IDE | $175 |
| 1.0GB | Quantum 31080A | IDE | $175 |
| 1.2GB | Quantum 31280S | SCSI | $239 |
| 1.6GB | WD 21600A | IDE | $199 |
| 1.7GB | Quantum 31700A | IDE | $199 |
| 2.0GB | IBM DCAS | SCSI | $339 |
| 2.0GB | NEC 2100S | SCSI | $279 |
| 2.0GB | Quantum 32150S | SCSI | $359 |
| 2.0GB | Quantum 32110S | Ultra | $299 |
| 2.0GB | Seagate 32132A | IDE | $229 |
| 2.0GB | Seagate 32107N | SCSI | $379 |
| 2.0GB | Seagate 32550N | SCSI | $599 |
| 2.0GB | Seagate 52160N | Ultra | $329 |
| 2.5GB | Seagate 52520A | IDE | $229 |
| 3.0GB | Quantum 33200S | SCSI | $329 |
| 3.5GB | Quantum 33840A | IDE | $299 |
| 4.0GB | IBM DCAS | Ultra | $599 |
| 4.0GB | Quantum 34550S | SCSI | $829 |
| 4.0GB | Seagate 15150N | SCSI | $849 |
| 4.0GB | Seagate 34371N | Ultra | $769 |
| 4.0GB | Seagate 14209N | Ultra | $759 |
| 4.0GB | Seagate 34501N | Ultra | $909 |
| 9.0GB | Micropolis 1991 | SCSI | $1259 |
| 9.0GB | Micropolis 1991AV | SCSI | $1359 |
| 9.0GB | Seagate 19171N | Ultra | $1459 |

### Tape Drives

| | | | |
|---|---|---|---|
| 2.0GB | Conner 2004 | DAT | $499 |
| 4.0GB | Conner 4324 | DAT | $559 |
| 8.0GB | HP 1533 | DAT | $895 |
| 8.0GB | Conner 8000 | DAT | $659 |
| 14.0GB | ExaByte 8505XL | DAT | $1759 |
| 16.0GB | Conner 4584 | DAT | $999 |

### Wide SCSI Drives

| | | |
|---|---|---|
| 1.0GB | Conner 1060W | $219 |
| 1.0GB | Quantum 31070W | $219 |
| 2.0GB | Quantum 32150W | $429 |
| 2.0GB | Seagate 32550W | $599 |
| 2.0GB | Seagate 32171W | $599 |
| 4.0GB | IBM DCAS-W Ultra | $659 |
| 4.0GB | Quantum 34300W | $759 |
| 4.0GB | Quantum 34550W | $869 |
| 4.0GB | Seagate 34371-UW | $809 |
| 4.0GB | Seagate 15150W | $869 |
| 9.0GB | IBM 39100W | $1459 |
| 9.0GB | Micropolis 1991W | $1359 |
| 9.0GB | Micropolis 1991WAV | $1359 |
| 9.0GB | Micropolis 3391W | $1359 |
| 9.0GB | Seagate 19171-UW | $1499 |

### 2.5" Notebook Drives

| | | | |
|---|---|---|---|
| 520MB | Seagate 9655AG | IDE | $189 |
| 810MB | Seagate 9816AG | IDE | $229 |
| 810MB | Toshiba MK1926FCV | SCSI | $399 |
| 810MB | Toshiba MK1926FB | IDE | $239 |
| 1.0GB | IBM Sanada-21080 | IDE | $249 |
| 1.3GB | Seagate 91350A | IDE | $329 |
| 1.3GB | Toshiba 1301MAV | IDE | $329 |
| 1.7GB | Toshiba MK1701 | IDE | $299 |
| 2.1GB | Toshiba MK2101MAN | IDE | $389 |
| 2.1GB | IBM DCRA-22160 | IDE | $429 |
| 2.1GB | Toshiba MK2103 | IDE | $429 |
| 3.0GB | Toshiba 3003MAN | IDE | $529 |

### Memory

**Standard 72-Pin SIMM**

| | | |
|---|---|---|
| 8MB | 2x32/36 | $43/ $55 |
| 16MB | 4x32/36 | $79/ $99 |
| 32MB | 8x32/36 | $159/$189 |

**EDO 72-Pin SIMM**

| | | |
|---|---|---|
| 8MB | 2x32 | $43 |
| 16MB | 4x32 | $79 |
| 32MB | 8x32 | $159 |

*Other Brands & Models Available*

**Call Us! 800-238-4453**

*Or, Visit our Web Page for Everyday New Low Prices!*

**www.basoncomputer.com**

CIRCLE 401 ON READER SERVICE CARD

# Add COLORFUL Music To Your Desktop

**You already have the music within you.** Edirol can help you ***express*** it through the PC or Mac you already own!

Enjoy new levels of music with a Sound Canvas, made by Roland, leaders in quality sound for 25 years.

For more information on the new Edirol **SC-88Pro** (made by Roland) and our complete line of computer music products, call or visit us on-line today to request your free buyer's guide.

- **Download software demos and enter our sweepstakes at http://www.edirol.com**
- **Call 1-800-380-2580 to request your free Edirol computer music buyer's guide**

EDIROL

*Member of the Roland Group*

808 Harrison Ave.
P.O. Box 4919
Blaine, WA 98231-4919

CIRCLE 489 ON READER SERVICE CARD

# Need to Read Bar Codes?

Nothing speaks of strength and durability like metal. Videx portable data collectors are housed in metal cases—strong enough to endure the harshest environments.

Call today for your free information kit!

Videx

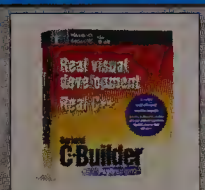
1105 N.E. Circle Blvd., Corvallis, OR 97330
541-758-0521 • Fax 541-752-5285 • http://www.videx.com

GCO789

CIRCLE 480 ON READER SERVICE CARD

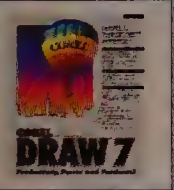
# Student - Teacher & School Discounts!

## LATEST VERSIONS & FULL PACKAGES



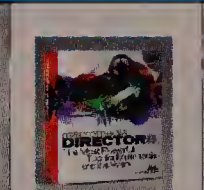
Borland C++ Builder 1.0 Pro $99

Fractal Painter 5.0 $209



CorelDRAW 7.0 $169

| | | | | | |
|---|---|---|---|---|---|
| 3D AcuWorlds | $165 | Flash 2.0 | $149 | OmniPage Pro 7.0 | $329 |
| 3D Studio Release 4.0 | $495 | Form Z 2.9 | CALL | PC MACLAN 6.0.1 | $129 |
| Astound 4.0.1 | $99 | Fractal 3D Suite | $199 | Photo/Graphic Edges | CALL |
| Authorware 3.5.1 | $649 | Fractal Expression 1.0 | $99 | PhotoTools 1.1 | $69 |
| AutoCAD LT 3.0 | $329 | Fractal Poser 2.0 | $79 | ProComm Plus 4.0 | $99 |
| Boris Effects Pro 2.2 | $199 | Graphics Suite 2.0 | $169 | QuickView Plus 4.0 | $39 |
| Borland C++ Developer Ste 5.0 | $199 | HyperStudio 3.0 | $119 | SPSS 6.1 Student | $99 |
| Bravado 1000 Pci | $619 | Illuminaire Paint | $749 | Screen Caffeine Pro | $75 |
| Canvas 5.0 | $179 | Infinl-D 3.5 | $229 | SigmaPlat 4.0 | $349 |
| ClarisWarks 4.0 Internet Edition | $89 | Inspiration 5.0 | $79 | SmartSuite 97 | $99 |
| ClearVideo 1.2 | $209 | Jamba 1.1 | $125 | Sportster 56K External | $209 |
| Click & Create 1.01 | $149 | Java Beat | $75 | Squizz 2.0 | $69 |
| Close-Up 6.5 | $89 | Jaz 1GB External SCSI Drive | $489 | Terra Farma Region 1,2, or 3 | $119 |
| Coda Finale 3.7 | $249 | KPT Bryce 2.0 | $119 | Turbo Assembler 5.0 | $79 |
| Corel Office Professional 7.0 | $149 | Kai's Power Tools 3.0 | $85 | TypeShop | $429 |
| Corel Ventura 7.0 | $149 | Kodak DC50 Digital Camera | $649 | Ultimate WebPage Graphics | $69 |
| Cubase Score | $299 | LightWave 3D 5.0 | CALL | Umax Astra 600S Scanner | $239 |
| DeBabelizer Pro | $319 | Logic Audia | $359 | VirusScan 3.0 | $49 |
| Delphi Professional 3 | $149 | M.Y.O.B 7.0 | $49 | Visia Professional 4.5 | $199 |
| EndNote Plus 2.1 w/EndLink | $165 | Mac-In-Das Plus 1.0 | $95 | Visual Objects Pro 2.0 | $169 |
| Epson Expression 636-Executive | $769 | Mathcad 6.0+ | $149 | VoiceType Simply Speaking | $75 |
| Epson Stylus 800 InkJet Printer | $419 | Mathematica 3.0 Student | $149 | Wacom Art Z II 6x8 Serial Tablet | $285 |
| Eye Candy 3.01 | $79 | MiniCAD 7.0 | $319 | Win Academy Tutorial Video | $35 |
| FileMaker Pro 3.0 | $129 | Netscape Navigator Gold 3.0 | $49 | WordPerfect Suite 7.0 | $79 |
| Final Draft 4.1 | $125 | OS/2 Warp 4.0 | $99 | Zip100 External SCSI Drive | $149 |



Director 6 Multimedia Studio $649

FreeHand Studio 7.0 $199

NetObjects Fusion 2.0 $199

*SAME DAY SHIPPING ON MOST ITEMS.
*SCHOOL PURCHASE ORDERS WELCOME.
*NO SURCHARGE ON CREDIT CARDS.
*IBM & MAC PRODUCTS AVAILABLE.
*ADOBE, SYMANTEC & MICROSOFT PRODUCTS AVAILABLE TO QUALIFIED STUDENTS, TEACHERS AND SCHOOLS.

PHONE (800) 289-3275

**Prices and Availability Subject to Change
**Free AOL Starter Kit While Supplies Last

CALL FOR FREE CATALOG!! (800)289-3275

INCLUDES COMPLETE PRICE LIST & FREE PRODUCT LITERATURE

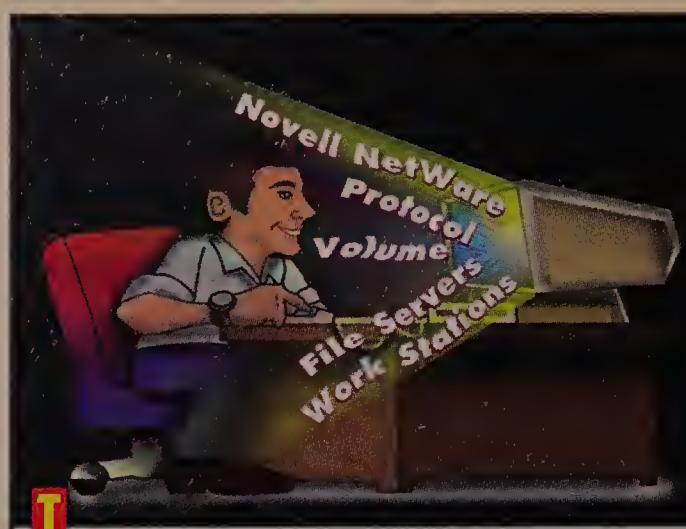
**WE WILL BEAT ANY ADVERTISED PRICE !**

The SOFTWARE Source

THE SOFTWARE SOURCE CO, INC.
1750 Brielle Ave, Unit A-2, Ocean NJ 07712
Phone (908) 695-2100 Fax (908) 695-9371

VISA MasterCard DISCOVER

CIRCLE 473 ON READER SERVICE CARD



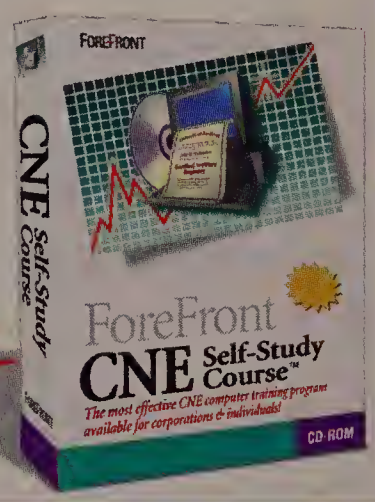

# BECOME A CNE OR MCSE...FAST!

## THE FIRST CNE COMPUTER BASED TRAINING PROGRAM IS HERE...

The first 100% Computer Based Training (CBT) program to fully prepare you for Novell's CNE exams. Its innovative design provides fast, effective and convenient training to anyone wishing to become a Certified NetWare Engineer, even when hampered by a busy schedule. Our CNE CBT allows you to learn and practice *everything* you'll need for full NetWare certification.

- All on one CD
- Interactive NetWare simulation for hands-on exercises
- Study at your own pace
- Hundreds of practice questions
- Priced below competitive products
- All you need to prepare for Novell's test!

Find out about the new MCSE Computer Based Self-Study Course!




**3.1 COURSE MODULES INCLUDE:**
- Administration v3.1x
- Advanced Administration v3.1x
- 3.1x Installation & Configuration (#802)
- Service & Support for NetWare (#801)
- TCP/IPTransport for NetWare
- Networking Technologies
- NetWare 3.1x to 4.1 Update.

**4.1 COURSE MODULES INCLUDE:**
- Administration v4.1x
- Advanced Administration v4.1
- 4.1 Installation & Configuration (#804)
- Service & Support for NetWare (#801)
- TCP/IPTransport for NetWare
- Networking Technologies
- 4.1 Design and Implementation

**DON'T PUT YOUR CAREER ON HOLD ANY LONGER!**

**Added Bonus!** The ForeFront CNE Self-Study Course comes with the required Micro House Technical Library™.

For more information about our limited time discount pricing CALL:

**1-800-475-5831**

FOREFRONT™ DIRECT

PC

25400 U.S. HWY. 19N., #285, CLEARWATER, FL 34623
(800) 653-4933 • (813) 724-8994 • FAX (813) 726-6922

CIRCLE 477 ON READER SERVICE CARD

# Better Prices. Bigger Selection. Better Call Now!

**WE SELL MORE LCD PROJECTORS TO MORE PEOPLE THAN ANYONE! HERE IS WHY.**

- ✔ Over 50 models in stock
- ✔ 30-day money back guarantee
- ✔ FREE technical support
- ✔ Uptime assurance
- ✔ Trade In-Trade Up
- ✔ Boxlight Certified for quality, reliability & value
- ✔ Overnight shipping

http://www.boxlight.com

BOXLIGHT™ CORPORATION

PRESENTING A BETTER WAY™

**BOXLIGHT 2020** NEW

The first projector rugged enough for "Road Warriors."

- True 800 x 600 SVGA
- "Fold-away" design
- Tough steel frame
- Only 11 lbs. Light!

**$4999**

BOXLIGHT Certified PRODUCTS

**REVOLUTION 3700** NEW

The new standard for portable multimedia performance

- 450 ANSI, True SVGA
- Lightweight – 12 lbs
- 3-LCD Polysilicon
- Zoom, Auto-Setup

**Call For Price**

FedEx Federal Express · UPS · VISA · MasterCard · American Express

**CALL 1-800-762-5757 TODAY!**

**International:** (360) 779 7901 **Fax:** (360) 779 3299
**Government:** (800) 497 4009 **Education:** (800) 689 6676
Monday - Friday, 6am - 5pm PST. Purchase orders accepted w/O.A.C.
Prices subject to change. Quantities may be limited.
30-day money back guarantee does not apply to Resellers.

NUMBER ONE IN RENTALS 800•736•6954

PCW 5/97

CIRCLE 511 ON READER SERVICE CARD

# Custom ULTRA SCSI Cables - Terminators - Cases

*If you want Ultra SCSI Performance use our Teflon Cables & Active Terminators.* *Our knowledgeable SCSI Technicians will solve all your SCSI problems...guaranteed!*

## SCSIVue™ Active Terminato

From: $59

Four models available with optional Remote LED Pak. These are the finest terminators available, they fix SCSI problems and improve reliability.

Benefits:
- Improves SCSI Bus Performance
- Less Errors; More Reliable Data Transfer
- Diagnoses Problems • Analyzes Signal Quality

Features:
- Active Regulation • *Fast 50 & Fast Wide 68*
- Status Indicators • Gold Contacts

## Active 2-1 SCSI Switch / Repeater

Benefits:
- Up to 14 Devices to 1 Computer
- Share Devices Between 2 Computers

Features:
- 2-1 Active Digital Switch/Repeater
- Regenerates SCSI Signal for Long Runs

From: $599

## Gold Diagnostic Adapters

Styles: Gender Changers
- Both 50 pin and 68 pin (all combinations)

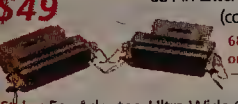
Gender Changer

Drive Bus Changer (run 68 pin on 50 pin bus

Styles: 68 pin Drive to S0 Bus
- 68 Pin Drive to S0 Pin IDC (runs wide drive as narrow)

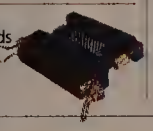
From: $49

Styles: 68 Pin Adapter Wide to S0 Pin Narrow
- 68 Pin External Adapter to S0 Pin (converts Host Adapter)



68 Pin to 50 Pin Centronics or S0 Pin MicroD Adapters

Styles: For Adaptec Ultra Wide Cards
- Adapters with partial termination built in for 68 to S0 converters (converts Host Adapter)



## SCSIVue™ Gold Diagnostic Cables

From: $39

Benefits:
- No Loss Of Important Data
- Faster Performance
- Test Cable Integrity

Features:
- Diagnostic Indicators • Large Ferrite Filters
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Extra Heavy 26 Gauge Wire • 100 Styles in Stock

## Teflon® 90 Ohm External Cables

From: $159

Benefits:
- Ultra SCSI 40 MB/s operation
- Fixes Ultra SCSI Cable Problems

Features:
- Perfect 90 Ohm Impedance Match
- Triple Pronged Connector With Gold contacts

## Gold .8mm Ultra SCSI Cables

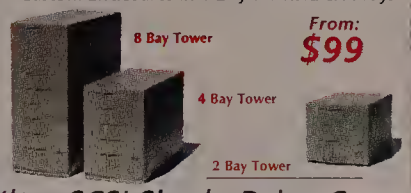
Benefits:
- Faster Performance
- Test Cable Integrity
- No Loss Of Important Data

Features:
- New .8mm Ultra SCSI Connector
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Diagnostic Indicators • Large Ferrite Filters

From: $109

## Gold External Ultra SCSI Cases

- Ultra SCSI Custom Teflon Cable Available
- Custom Enclosures in 1 Day for Raid & Arrays




From: $99

## Ultra SCSI Single Drive Cases

The Vertical 3.5" Case Kit offers a small transportable package. Ideally suited for moving around, this durable case can take a beating. Universal 35 Watt power supply.

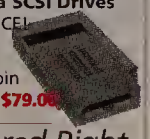
From: $59

The Horizontal 3.5" or 5.25" Case Kit Offers a stackable solution for any desktop need. Shown with Optional Bay Cooler installed.

Open Face and Closed Face Models Available. Optional 50 or 68 Teflon® Cables Available.

Dual Fan & Bracket $29

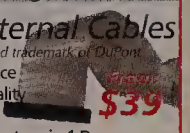
NEW Accessories! Bay Cooler Kit keeps those HOT Ultra SCSI Drives COLD as ICE!



HOT SWAP Pull Out Bays Compatible with all 50 pin & 6B pin SCSI Buses up to Fast SCSI 2. From: $79.00

## Custom Teflon® Internal Cables

Benefits: *Teflon® is a registered trademark of DuPont*
- Less Errors, Ultimate Performance
- Silver Wire Improves Signal Quality



From: $39

Features:
- Perfect 90 Ohm Impedance • Custom in 1 Day
- Triple Pronged Connector - Gold contacts Silver Wire

6B Pin Internal Cables, custom or stock, from 1 to 15 SCSI devices per cable . We can also make Custom 6B pin and 50 pin Combination Cables that allow you to use narrow drives on a wide cable.

## Active Digital SCSI Repeater

From: $149

PS Included

Benefits:
- Models for all SCSI types
- Fixes SCSI Cable Problems
- Doubles Cable Length (up to 18')

Features:
- Active Termination and Signal Purification
- Ultra Fast Performance for Added Capabilities
- Diagnostic Capabilities • 30u" Gold Contacts

## OEM SCSI Repeater

If you integrate SCSI Raids or Arrays and are having problems making it work, the Granite SCSI Repeater will make it work. Designed to fit inside any computer or external case.

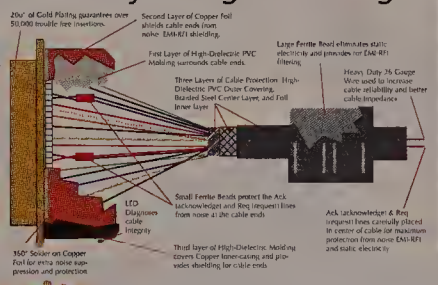
## SCSI Cable Tester - LED Readout

This Digital SCSI Cable Tester can test all the popular cable styles for opens, shorts, and unreliable operation. Battery powered for easy use anywhere you need it. Three models to choose from:
- 50 pin IDC
- 50 pin Centronics
- 68 pin MicroD

From: $49

## Granite Cables Are The Best Because They're Engineered Right.

Granite Cables were designed by SCSI Engineers to be the Best Cables On The Market. Everything about them means better performance and higher reliability. Our design incorporates an exclusive shield that protects the Acknowledge and Request lines from noise. Large Ferrite beads are installed on all cables to protect them from static and noise. Every cable incorporates a LED indicator that lets you know it is operating properly. We also use more GOLD on every cable. Add to this our impedance matching techniques and you have most of what makes us THE BEST!




Granite

**Online Catalog at... www.scsipro.com** *The SCSI Solution Company* D•I•G•I•T•A•L 3101 Whipple Rd. Union City, CA. 94587 Ph: 510-471-6442 Fax 510-471-6267

CIRCLE 454 ON READER SERVICE CARD

---

**WEB HOSTING**

**$14.95** per month from

**www.9netave.net**

- SGI Origin 2000 Servers
- Complete site statistics
- Broadband connection via UUnet
- Professional site design services
- Oracle based search engines
- Virtual store construction
- SSL secure servers
- Old fashioned customer service

1 888 9NET AVE [1 888 963 8283]

9NETAVENUE

Oracle is a trademark of Oracle Corp. Origin 2000 is a trademark of Silicon Graphics Inc.

CIRCLE 410 ON READER SERVICE CARD

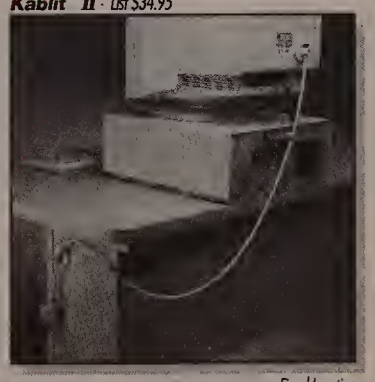
---

# STOP COMPUTER THEFT!

## IN THE OFFICE — ON THE ROAD

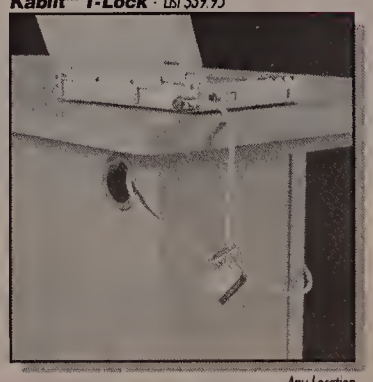
- Secure computer or notebook to desk, table, etc.
- Protect data
- Lifetime warranty

Kablit™ II · List $34.95



Fixed Location

Kablit™ T-Lock · List $39.95



Any Location

Quick And Easy To Install
Available For Macintosh Too

Padlock Security Provided by Master® Lock

Secure-It

TOUGH UNDER FIRE

**Order now — Call 800-451-7592...**
**Open 8:30 am - 8 pm EST**

18 Maple Court, East Longmeadow, MA 01028, USA phone 413-525-7039
EMAIL: secure-it@owls.com INTERNET: http://www.secure-it.com

*The particular Master® Lock Trademarks used are trademarks of the Master® Lock Company and are used by Secure-It, Inc. under license.*

CIRCLE 433 ON READER SERVICE CARD

---

# SVGA Splitters

http://www.hallresearch.com

HRT

HALL RESEARCH TECHNOLOGIES
800-959-6439
714-641-6607 fax: -6698
3613 W. MacArthur Blvd.,
Santa Ana, CA 92704

*Celebrating Our 12th year!*

Toll-Free Support
One Year Warranty
Quantity Discounts

- Display your PC's screen on many monitors simultaneously
- Perfect for demos, training and remote monitoring
- Proven wideband amplifier assures bright and crisp image - GUARANTEED!
- Automatically access one PC from two keyboards & mice with ease
- Quality monitor and keyboard extension cables available to 500 feet
- Exclusive video switches, multiplexers and other unique products

CIRCLE 459 ON READER SERVICE CARD

# Bar Codes Direct

## From The Manufacturer

### Labeling Software

For Dot Matrix or LaserJet

Windows and DOS!

- Any Format, Any Label. WYSIWYG, Text Design
- **Formats for Sears, K-Mart, Penney's, WalMart, TCIF, Logmars, AIAG, etc.**
- UCC-128, UPC/EAN, 2 of 5, Codabar, & Code 39
- Big Text and PCX. Powerful, Versatile, Easy!
- Imports ASCII data files from dBase, etc.
- LabelRIGHT™ for **Windows™ – $295**
- LabelRIGHT™ for **DOS–$279**

### Bar Codes for Windows™

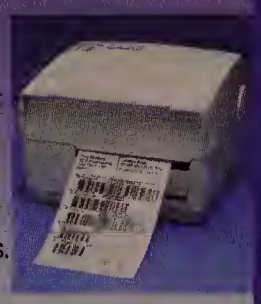
- Insert bar codes into any font based Windows program via "Hot Key"
- UPC/EAN, UCC-128,128, 2of5, Codabar, Code 39
- Fonts, Bitmaps and Metafiles, Complete – **$199**

### Radio Frequency Terminal

- For IBM or Macintosh Computers

- 400 to 1000 foot Range
- 16 Selectable Frequencies
- 2 way RS-232 Communication
- Kybrd, Wand, Laser or CCD
- 1-16 Terminals/Base Station
- 6.3" x 3.3" x 1.25", 14 oz.
- Base Station – **$845**
- Complete Terminal – **$1090**
- With Integrated Laser – **$1790**

### Thermal Transfer Printers



- 2" per second Thermal Transfer – Up to 4" wide
- Supports all Popular Bar Codes; 1 year Warranty
- Prints Bar Codes, Big Text, and PCX Graphics
- Small size, Weighs 20 lbs.
- Complete with labels, ribbon, cable, LabelRIGHT Windows or DOS software, and Datamax Ovation Printer – **$1095**

### Portable Bar Code Readers

for PC, Mac and Serial

With Voice!

- Battery Operated Reader – 64K or 256K
- Attaches as 2nd Keyboard or Serial
- Display messages & voice messages prompt operator.
- Pick lists, tables.
- Wand, CCD or Laser Scanner
- UPC/EAN, 128, 2of5, MSI, Code 39, etc.
- Date/time stamps
- Built-in Inventory Programs -No Programming Necessary
- **Very Easy to Create Custom Prompts**
- Small Size-Weighs Only 12 oz.
- 64K Unit Complete with Wand & Voice – **$759**
- 64K Unit with Integrated Laser– **$1299**

### Bar Code Readers

for PC, XT, AT, PS/2, Mac and RS-232 Terminals

- Attaches as 2nd Keyboard
- UPC/EAN, Code 128, 2of5, MSI, Code 39, etc.
- Wand, Magstripe, CCD, Slot Badge or Laser
- All European Keyboards Supported
- Superior Read Rates. Made in USA.
- **Top Rated by Independent Reviews**
- Complete Wand only Reader – **$299**
- Complete with Laser Scanner – **$649**

### Cordless RF CCD Scanner

- Transmits up to 100' away from Base Station
- Base attaches as 2nd Keyboard to PC or Mac
- Complete Base Station and "Laser-like" RF CCD Scanner with 5" depth of field – **$899**

## Ordering is Easy! 800-345-4220

Europe Phone: (353) 1 6614 566 • Europe Fax: (353) 1 6614 622 USA Phone: 408-458-9938 • USA Fax: 408-458-9964

- Same Day Shipping
- 30 Day Money Back Guarantee
- Direct from Manufacturer
- Free "800" Support
- Free UPS Blue in USA

In Europe call our Ireland Office:
353 1 6614 566 (Fax: 353 1 6614 622)

WORTHINGTON DATA SOLUTIONS

Call For Free Catalog And Bar Code Primer!

---

Netscape: Student Section

# Address For Success

http://www.aics.edu

## Welcome to the AICS Virtual Campus

- Earn B.S. and M.S. in Computer Science
- DISTANCE EDUCATION
- Object oriented B.S. program
- New courses in Java, Networking, HTML, MIS
- Approved by more than 275 companies
- Follows ACM/IEEE guidelines
- Thousands of students throughout U.S.

AMERICAN INSTITUTE FOR COMPUTER SCIENCES

*Free catalogue*
***1-800-767-AICS***
*or* ***http://www.aics.edu***

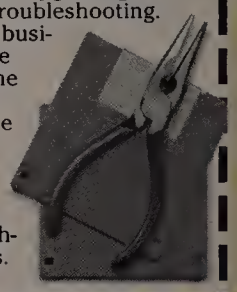
ACCREDITED MEMBER World Association of Universities and Colleges

---

EDUCATION

# Be a PC repair expert!

CAREER-LEVEL HOME STUDY



Learn PC repair, upgrading, installation, and troubleshooting. Open your own business, or increase your value on the job. Our professional-level home study program lets you learn—and then earn—*without* a costly workshop or high-tech instruments. **Send or call 24 hours a day for your free literature.**

**Call 800-223-4542**

Name _____
Address _____
City/State _____ Zip _____
Age _____ Phone ( ) _____

**The School of PC Repair**
PCDI, 6065 Roswell Road
Dept. JJH684, Atlanta, GA 30328

CIRCLE 451 ON READER SERVICE CARD

# LOWEST PRICES ANYWHERE!

**TOSHIBA**
Satellite Pro 430CDT ....$2255
Portege 650CT .....$3433
Portege 660CDT .....$4414
Tecra 730CDT .....$4414
Tecra 740CDT/MMX ....$5789

**NEC**
Versa 6050MH .....$3794
Versa 2650CDT/MMX ..$3819
Versa 6050MX/MMX ..$4458
Versa 6200/MMX .....$6099

*Over 20,000 Products In Stock Ready to Ship!*

**SONY**
Sony 100SX 15" .....$359
Sony 100SF 15" .....$399
Sony 17SF-2 17" .....$599
Sony 200SX 17" .....$668
Sony 200SF 17" .....$771
Sony 20SF-2 20" ....$1299

**NEC**
NEC M500 15" .....$364
NEC M700 17" .....$689
NEC E1100 21" .....$1578

**ATI**
Video Xpression 2MB ...$72
TV Tuner for Xpression $105
3D Xpression+ .....$159

**simple TECHNOLOGY**

| | |
|---|---|
| Toshiba 200 430 730 8/16/32MB | $71/117/224 |
| Toshiba 500 510 650 8/16/32MB | $56/113/272 |
| Toshiba T1900-T4900 8/16/32MB | $65/117/220 |
| IBM 355 360 755 4/8/16MB | $39/65/117 |
| IBM 760C/CD 760L/LD 8/16MB | $57/108 |
| IBM 365X 560 760E 8/16/32MB | $57/108/272 |
| NEC Versa EVMP 4000 8/16/32MB | $68/117/224 |
| Compaq Contura 400 4/8/16MB | $45/70/125 |
| Compaq Contura Aero 4/8MB | $56/68 |

**CALL FOR A FREE CLUBPC CATALOG!** Source Code 830797

Sales/Inquiries 714-707-3082
24 Hour Fax 714-768-7307
All price subject to change without notice.

ORDER 6AM - 6PM PST • MON - FRI
**1-800-216-2763**
Visit Our Web Site @ http://www.club-pc.com

**ClubPC®**
60 Parker, Irvine, CA 92618

CIRCLE 502 ON READER SERVICE CARD

SERVICES/SUPPLIES

# MIRROR IMAGES

DISKETTE DUPLICATION

**Superior duplication . . .**
Your reputation depends on it.
Our reputation assures you of it.

- ALL DISK FORMATS
- FAST 24 HOUR TURNAROUND
- EXCEPTIONAL PRICING AND SERVICE

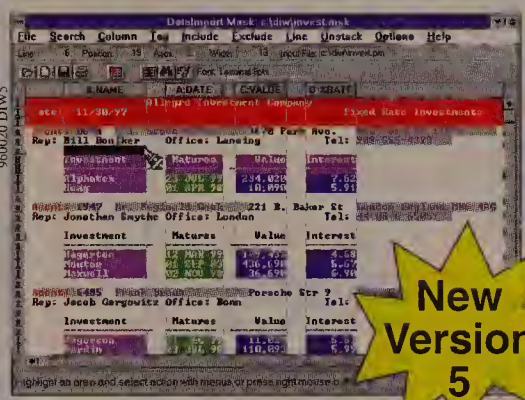
*Call for more information and quotation.*

**800-322-0577**
OHIO - NEW JERSEY

# Garbage In... ...Data Out!

**Pull data from any computer report into:**

Access
Excel
dBase
HTML Tables
1-2-3
Paradox
Approach
Quattro
Clarion
and more!




New Version 5

**DataImport®**
File Translation Utility for Windows®

Go far *beyond* the meager limitations of import wizards and parsers. Selectively **mine data** from even complex multi-level reports and forms printed-to-disk. DataImport makes it easy to dynamically clean-up reports, parse names and rearrange data. Instantly create new files or add data to existing files.

***DataImport does it all!***

**$189** Single User **$495** 5-User LAN

SPALDING SOFTWARE

**Free Demo & Test Drive:**
**www.spaldingsoft.com**
Voice: (770) 449-0594
Fax: (770) 449-0052
Norcross, Georgia USA

MasterCard DISCOVER NOVUS AMERICAN EXPRESS Cards VISA

CIRCLE 434 ON READER SERVICE CARD

SERVICES/SUPPLIES

## Insures Your Computer

SAFEWARE's Computerowners insurance policy provides for repair or replacement of your computer hardware, media and purchased software. Annual premiums start at $49. Cover against theft, fire, power surge, natural disasters, and even accidental damage!

**Call 1-800-800-1492**

SAFEWARE, The Insurance Agency Inc.
5760 N. High Street
PO Box 656
Columbus, OH 43085
Local: 1-614-781-1492

CIRCLE 421 ON READER SERVICE CARD

SERVICES/SUPPLIES

**1-800-8-GLOBAL**
**GLOBAL®**

**FREE** *catalog*

228 page guide to computer furniture, supplies & accessories

**COMPUTER SUPPLIES**
11 Harbor Park Dr.
Dept. 94 PCW
Port Washington, NY 11050

CIRCLE 508 ON READER SERVICE CARD

**For high performance web hosting, more people turn to Hiway than anyone else.**

Serving more than 30,000 web sites for customers in over 80 countries, Hiway is the worldwide leader in web hosting. With so many choices, why does everyone pick Hiway?

*The world leader in FrontPage™ hosting*

- ✓ 3 T3 lines to diverse backbones
- ✓ Silicon Graphics WebFORCE Servers
- ✓ Industrial-strength Cisco routers
- ✓ 99.5% uptime—guaranteed!
- ✓ Uninterruptible power
- ✓ 24 x 7 network operation center
- ✓ 40 terrabyte tape archive system
- ✓ 24 x 7 multilingual support
- ✓ Accounts set up within a few hours
- ✓ Domains registered within 24 hours
- ✓ 30 day money back guarantee
- ✓ Serving over 30,000 domains

PLANS FROM **$24.95** PER MONTH

Reseller Opportunities Available

(800) 339-HWAY
**www.hway.net**
(561) 989-8574

**Hiway Technologies**
*THE WORLDWIDE LEADER IN WEB HOSTING*

CIRCLE 416 ON READER SERVICE CARD

PC WORLD'S PC-proficient managers are involved throughout the buying process. They have the budget authority to sign off on final purchases and the knowledge necessary to recommend and evaluate brands.

**CALL THE PC WORLD CLASSIFIED DEPARTMENT NOW**
**FOR MORE DETAILS (203) 857-5101 OR -5102**

BUSINESS DIRECTORY

**USED SOFTWARE**
- Used IBM Compatible Software
- Most Popular Titles Available
- Save up to 50% on Current Versions
- Huge Savings on Prior Versions
- Includes Original Manuals & Disks
- Guaranteed Complete & Virus Free
- 30 Day Money Back Guarantee
- Amex, Discover, MC & VISA
- Call 7am–4pm PST M–F for Free Price List

**Recycled Software, Inc.**
PO Box 33999
Las Vegas, NV 89133-3999
**800-851-2425 • Fax 702-655-5662**

CIRCLE 441 ON READER SERVICE CARD

**MAIL ORDER PROCESSING SOFTWARE**
- Order Entry
- Credit Card Processing
- UPS Manifest
- Inventory
- Mail List Management
- Advertising Tracking
- Versions under $300

**PC INNOVATIONS**
**1-800-774-6668**

UPGRADES/MEMORY

# DIRECT PRICES TO THE PUBLIC

## We Will Beat Any Advertised Price!

**All memory is brand new & comes with a lifetime warranty!**

**MEMORY 72 pin EDO**

| | |
|---|---|
| 1 x 32–60 | $19 |
| 2 x 32–60 | $31 |
| 4 x 32–60 | $59 |
| 8 x 32–60 | $139 |

**CPU's (Intel Only)**

| | |
|---|---|
| P–100Mhz | $95 |
| P–120Mhz | $105 |
| P–133Mhz | $109 |
| P–150Mhz | $119 |
| P–166Mhz | $199 |
| P–200Mhz | $239 |
| P–Pro 180 | $350 |
| P–Pro 200 | $329 |

**HARD DRIVES**

| | |
|---|---|
| 850MB | $129 |
| 1.2GB | $149 |
| 2.1GB | $179 |
| 2.5GB | $199 |
| 3.2GB | $229 |

**MOTHER BOARDS**

586–75–200Mhz $84
Intel VX 430 Chipset, 256kpb cache, 2s2p on brd IDE/IO

**MODEMS**

| | |
|---|---|
| 33.6 int fax/data | $67 |
| 33.7 int voice/fax | $68 |
| UpGradable 56K | $78 |

**SOUND CARDS**

| | |
|---|---|
| VIBRA 16 PnP | $48 |
| SB 32 Pnp | $79 |
| AWE Gold | $209 |

**VIDEO CARDS**

| | |
|---|---|
| Matrox Millenium | $139 |
| Mystique 2MB | $99 |
| Dia3d2MB | $77 |

**CD ROMS**

| | |
|---|---|
| 8x int | $71 |
| 10x int | $98 |
| 12x int | $79 |
| 16x int | $95 |

Over 1000 items in stock, check out our cool website www.memory-online.com

**800-801-0087**

714-488-0477 • Fax 714-488-0495

**MEMORY ON-LINE**

Office Hours M - F • 7 - 5 PST • SAT 8 - 12 PST

Prices and availability subject to change without notice.

CIRCLE 466 ON READER SERVICE CARD

UPGRADES/MEMORY

## Add SEVEN Slots

With the DCS *SLOT BOX*®

**For Pentium, 686, 586, 486, and 386 Systems... $489**

Adds SEVEN 16 bit ISA expansion slots

**Compaq Upgrade Motherboards**

| | |
|---|---|
| 486DX4-133 | $ 389 |
| 686-P166+ | $ 499 |
| Pentium 150 | $ 649 |
| Pentium 166 | $ 699 |

**DCS Industries 800-537-3539**

FAX 614-592-1527 Call for FREE
Local 614-594-4180 Catalog

CIRCLE 493 ON READER SERVICE CARD

UPGRADES/MEMORY

## TANDY UPGRADES

**Hard Cards for 1000's**

21meg $169 210meg $229
42meg $219 540meg $279

**1000 EX & HX Hard Drives**

21meg $239 540meg $349

**Upgrade Motherboards**

| | |
|---|---|
| 80486DX/4-133 | $389 |
| 686-166 | $499 |

We sell New and Used Hard Drives, Floppy Drives, Motherboards, Memory, Keyboards, VGA & CGA Monitors/Cards, and more for Tandy. **Call or write for our FREE catalog.** We buy used Tandy computer equipment.

**DCS Industries**
5265 Hebbardsville Rd.
Athens, OH 45701
**800-537-3539**
U.S. & Canada

Foreign 614-594-4180
FAX 614-592-1527

CIRCLE 465 ON READER SERVICE CARD

UPGRADES/MEMORY

## We'll *Pay YOU* for Your Computer Memory!

**We BUY Back All Types of Memory...**

**30 pin, 72 pin, 168 pin, SIMMS, DIMMS, Notebook & Laser Memory**

**All Memory Has Value!**

**Call us and get a price for your memory.**

LIFETIME WARRANTY **We Also SELL MEMORY** LOWEST PRICES!

**72 PIN SIMMS**

| | | NON PARITY | EDO | (36 BIT) PARITY |
|---|---|---|---|---|
| 1x32 | 4MB | 19.00 | 19.00 | 29.00 |
| 2x32 | 8MB | 38.00 | 38.00 | 55.00 |
| 4x32 | 16MB | 75.00 | 75.00 | 95.00 |
| 8x32 | 32MB | 149.00 | 149.00 | 179.00 |
| 16x32 | 64MB | 429.00 | 429.00 | 449.00 |

**30 PIN SIMMS**

| | 3 CHIP | 9 CHIP |
|---|---|---|
| 1MB | 6.00 | 12.00 |
| 4MB | 25.00 | 32.00 |
| 256K | 1.00 | 1.00 |

**DIMMS**

| | SDRAM 168 PIN | Apple 168 PIN | 168 PIN ECC/EDO |
|---|---|---|---|
| 4MB | — | 39.00 | — |
| 8MB | 69.00 | 59.00 | 79.00 |
| 16MB | 99.00 | 89.00 | 109.00 |
| 32MB | 199.00 | 169.00 | 229.00 |
| 64MB | 429.00 | 339.00 | 499.00 |

**Laser Printer Memory**

| | 1 | 2 | 4 | 8 | 16 | 32 |
|---|---|---|---|---|---|---|
| HP | 14 | 29 | 39 | 69 | 109 | 199 |
| Epson | 14 | 29 | — | 69 | 129 | 219 |
| Pano | 14 | 29 | — | 69 | — | — |
| Lexmark | 14 | 29 | 39 | 69 | 119 | 219 |

**NOTEBOOK**

| | 4 | 8 | 16 | 32 |
|---|---|---|---|---|
| AST | 49 | — | 129 | 239 |
| Canon | 49 | 69 | 129 | 239 |
| Compaq | 49 | 69 | 129 | 239 |
| Dell | 49 | 69 | 129 | — |
| Epson | 49 | 69 | 129 | — |
| Fujitsu | — | 69 | 129 | 239 |
| Gateway | 49 | 69 | 129 | 239 |
| IBM | 49 | 69 | 129 | 239 |
| NEC | 49 | 69 | 129 | 239 |
| Sharp | 49 | 69 | 129 | 239 |
| Toshiba | 49 | 69 | 129 | 239 |
| Winbook XP | — | — | 129 | 239 |
| Zenith | 49 | 69 | 129 | — |

*Prices differ depending on model. These are general prices.*

We Carry a Complete Line of Desktop, Notebook, Laptop, Subnote, Credit Card (IC DRAM) Modules, Video, Cache and Macintosh Memory Upgrades. Call with your machine type! Memory Modules New & Used have a Lifetime Warranty! Call for CPU Chip Pricing!

OVER 30 YEARS EXPERIENCE

**The Memory Liquidators**

**(800) 718-7755**

www.memoryliquidators.com

*prices subject to change without notice*

"The company that buys Memory back"

531 Main St., El Segundo, CA 90245 • Ph. 310-326-5656 • Fax 310-326-7790 • M-F: 8-5 pst

CIRCLE 520 ON READER SERVICE CARD

SOFTWARE/GENERAL

## Software Blowout!!!

USA's #1 Software Provider

| | |
|---|---|
| Microsoft Office 97 PRO | $250 |
| Microsoft Office 97 STD | $199 |
| Microsoft Office STD 4.2 | $199 |
| Microsoft Office PRO 4.3 | $240 |
| M.S Win Svr NT 4.0 | $475 |
| M.S Win Wrkst NT 4.0 | $185 |
| Microsoft Project 4.0 | $250 |
| Autocad LT w/95 | $310 |
| MS Word/Excell/Powerpt | $149 |
| Microsoft Frontpage 97 | $ 99 |
| Adobe Photoshop 4.0 | $325 |
| Adobe Pagemaker 6.5 | $299 |
| Adobe Illustrator 7.0 | $225 |
| Macromedia Freehand 7.0 | $225 |

Call for other item not listed.

**SOFTWAREMART +**
**(800) 785-0048**
call 9 to 6 PST FAX: (818) 346-1890
prices subject to change

CIRCLE 415 ON READER SERVICE CARD

SYSTEMS

## Rent Computers Printers

From Only **$75**/mo.

Lowest Rental Rates in the USA !

Compare • Switch • Save

*Always Rent New Technology*

Call: (213) 937-6700

AMCO Rents and Sales, Inc.

CIRCLE 445 ON READER SERVICE CARD

SERVICES/SUPPLIES

## DATA RECOVERY: 800-440-1904

### 7 good reasons to choose DriveSavers:

©1997 DRIVESAVERS, INC.

1. We're the most trusted and respected data recovery specialists.
2. 24-hour, onsite, and weekend service available.
3. Proprietary techniques so advanced we retrieve data others might simply abandon.
4. Over 12 years of data recovery experience.
5. Certified to maintain most drive warranties.
6. Featured by CNN, NextStep, C-Net, Forbes.
7. All storage devices; DOS, Win95, WinNT, OS/2, Mac OS, UNIX, Sun, SGI, Novell.

Clip and save this ad. Visit DriveSavers at: www.drivesavers.com

DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949, INTL.: 415-382-2000, FAX: 415-883-0780

CIRCLE 431 ON READER SERVICE CARD

# FREE PRODUCT INFORMATION

PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

## INFORMATION FROM ADVERTISERS

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 |
| 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 |
| 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |
| 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 |
| 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 |
| 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 |
| 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 |
| 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 |
| 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 |
| 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 |
| 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 |
| 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 |

☐ Check here for a 1-year (12 issue) subscription (U.S. only). You will be billed $19.97.

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (503) 684-5370.

## PRODUCTS FEATURED IN EDITORIAL

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 |
| 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 |
| 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 |
| 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 |
| 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 |
| 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 |
| 721 | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 |
| 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 |
| 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 |
| 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 |
| 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 | 815 | 816 | 817 | 818 | 819 | 820 |
| 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 | 835 | 836 | 837 | 838 | 839 | 840 |
| 841 | 842 | 843 | 844 | 845 | 846 | 847 | 848 | 849 | 850 | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 |
| 861 | 862 | 863 | 864 | 865 | 866 | 867 | 868 | 869 | 870 | 871 | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 |
| 881 | 882 | 883 | 884 | 885 | 886 | 887 | 888 | 889 | 890 | 891 | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 |

## PRODUCT CATEGORY INFORMATION

7/97

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

**Editorial Features (see article for numbers)**

901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920

**Advertised Products**

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

July 1997 This card expires November 7, 1997 N1

FREE PRODUCT INFORMATION

For quicker response, fax to (503)684-5370

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS MAIL PERMIT NO. 848 PORTLAND, OR

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

**Reader Service Department**
**12950 SW Pacific Hwy Ste 7**
**Tigard, OR 97223-9750**


# FREE PRODUCT INFORMATION

PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

## INFORMATION FROM ADVERTISERS

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 |
| 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 |
| 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |
| 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 |
| 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 |
| 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 |
| 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 |
| 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 |
| 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 |
| 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 |
| 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 |
| 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 |

☐ Check here for a 1-year (12 issue) subscription (U.S. only). You will be billed $19.97.

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (503) 684-5370.

## PRODUCTS FEATURED IN EDITORIAL

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 |
| 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 |
| 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 |
| 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 |
| 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 |
| 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 |
| 721 | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 |
| 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 |
| 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 |
| 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 |
| 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 | 815 | 816 | 817 | 818 | 819 | 820 |
| 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 | 835 | 836 | 837 | 838 | 839 | 840 |
| 841 | 842 | 843 | 844 | 845 | 846 | 847 | 848 | 849 | 850 | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 |
| 861 | 862 | 863 | 864 | 865 | 866 | 867 | 868 | 869 | 870 | 871 | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 |
| 881 | 882 | 883 | 884 | 885 | 886 | 887 | 888 | 889 | 890 | 891 | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 |

## PRODUCT CATEGORY INFORMATION

7/97

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

**Editorial Features (see article for numbers)**

901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920

**Advertised Products**

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

July 1997 This card expires November 7, 1997 N3

FREE PRODUCT INFORMATION

For quicker response, fax to (503)684-5370

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS MAIL PERMIT NO. 848 PORTLAND, OR

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

**Reader Service Department**
**12950 SW Pacific Hwy Ste 7**
**Tigard, OR 97223-9750**

## FREE PRODUCT INFORMATION PC WORLD

NAME

TITLE

COMPANY

ADDRESS

CITY STATE ZIP

PHONE ( ) FAX ( )

### INFORMATION FROM ADVERTISERS

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 |
| 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 |
| 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |
| 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 |
| 221 | 222 | 223 | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 | 240 |
| 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 | 256 | 257 | 258 | 259 | 260 |
| 401 | 402 | 403 | 404 | 405 | 406 | 407 | 408 | 409 | 410 | 411 | 412 | 413 | 414 | 415 | 416 | 417 | 418 | 419 | 420 |
| 421 | 422 | 423 | 424 | 425 | 426 | 427 | 428 | 429 | 430 | 431 | 432 | 433 | 434 | 435 | 436 | 437 | 438 | 439 | 440 |
| 441 | 442 | 443 | 444 | 445 | 446 | 447 | 448 | 449 | 450 | 451 | 452 | 453 | 454 | 455 | 456 | 457 | 458 | 459 | 460 |
| 461 | 462 | 463 | 464 | 465 | 466 | 467 | 468 | 469 | 470 | 471 | 472 | 473 | 474 | 475 | 476 | 477 | 478 | 479 | 480 |
| 481 | 482 | 483 | 484 | 485 | 486 | 487 | 488 | 489 | 490 | 491 | 492 | 493 | 494 | 495 | 496 | 497 | 498 | 499 | 500 |
| 501 | 502 | 503 | 504 | 505 | 506 | 507 | 508 | 509 | 510 | 511 | 512 | 513 | 514 | 515 | 516 | 517 | 518 | 519 | 520 |

☐ Check here for a 1-year (12 issue) subscription (U.S. only). You will be billed $19.97.

Circle the number corresponding to the product or product category you need to know more about. Mail or fax the completed card today. Manufacturers will send product information directly to you. Fax to (503) 684-5370.

### PRODUCTS FEATURED IN EDITORIAL

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 601 | 602 | 603 | 604 | 605 | 606 | 607 | 608 | 609 | 610 | 611 | 612 | 613 | 614 | 615 | 616 | 617 | 618 | 619 | 620 |
| 621 | 622 | 623 | 624 | 625 | 626 | 627 | 628 | 629 | 630 | 631 | 632 | 633 | 634 | 635 | 636 | 637 | 638 | 639 | 640 |
| 641 | 642 | 643 | 644 | 645 | 646 | 647 | 648 | 649 | 650 | 651 | 652 | 653 | 654 | 655 | 656 | 657 | 658 | 659 | 660 |
| 661 | 662 | 663 | 664 | 665 | 666 | 667 | 668 | 669 | 670 | 671 | 672 | 673 | 674 | 675 | 676 | 677 | 678 | 679 | 680 |
| 681 | 682 | 683 | 684 | 685 | 686 | 687 | 688 | 689 | 690 | 691 | 692 | 693 | 694 | 695 | 696 | 697 | 698 | 699 | 700 |
| 701 | 702 | 703 | 704 | 705 | 706 | 707 | 708 | 709 | 710 | 711 | 712 | 713 | 714 | 715 | 716 | 717 | 718 | 719 | 720 |
| 721 | 722 | 723 | 724 | 725 | 726 | 727 | 728 | 729 | 730 | 731 | 732 | 733 | 734 | 735 | 736 | 737 | 738 | 739 | 740 |
| 741 | 742 | 743 | 744 | 745 | 746 | 747 | 748 | 749 | 750 | 751 | 752 | 753 | 754 | 755 | 756 | 757 | 758 | 759 | 760 |
| 761 | 762 | 763 | 764 | 765 | 766 | 767 | 768 | 769 | 770 | 771 | 772 | 773 | 774 | 775 | 776 | 777 | 778 | 779 | 780 |
| 781 | 782 | 783 | 784 | 785 | 786 | 787 | 788 | 789 | 790 | 791 | 792 | 793 | 794 | 795 | 796 | 797 | 798 | 799 | 800 |
| 801 | 802 | 803 | 804 | 805 | 806 | 807 | 808 | 809 | 810 | 811 | 812 | 813 | 814 | 815 | 816 | 817 | 818 | 819 | 820 |
| 821 | 822 | 823 | 824 | 825 | 826 | 827 | 828 | 829 | 830 | 831 | 832 | 833 | 834 | 835 | 836 | 837 | 838 | 839 | 840 |
| 841 | 842 | 843 | 844 | 845 | 846 | 847 | 848 | 849 | 850 | 851 | 852 | 853 | 854 | 855 | 856 | 857 | 858 | 859 | 860 |
| 861 | 862 | 863 | 864 | 865 | 866 | 867 | 868 | 869 | 870 | 871 | 872 | 873 | 874 | 875 | 876 | 877 | 878 | 879 | 880 |
| 881 | 882 | 883 | 884 | 885 | 886 | 887 | 888 | 889 | 890 | 891 | 892 | 893 | 894 | 895 | 896 | 897 | 898 | 899 | 900 |

### PRODUCT CATEGORY INFORMATION 7/97

For information on all of the products mentioned in an article or an entire category of advertised products, circle the appropriate number below.

**Editorial Features (see article for numbers)**

901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920

**Advertised Products**

951 Desktop computers
952 Notebook computers
953 Windows 95 software
954 Monitors and video boards
955 Accounting software
956 Graphics software
957 Network/sharing products
958 Printers
959 Multimedia products
960 Utilities
961 Mail order companies
962 Storage devices

July 1997 This card expires November 7, 1997 N2

FREE PRODUCT INFORMATION

For quicker response, fax to (503)684-5370

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

**BUSINESS REPLY MAIL**

FIRST CLASS MAIL PERMIT NO. 848 PORTLAND, OR

POSTAGE WILL BE PAID BY ADDRESSEE

PC WORLD

**Reader Service Department**
**12950 SW Pacific Hwy Ste 7**
**Tigard, OR 97223-9750**

# PC WORLD

**PRESIDENT AND CEO** Richard J. Marino
**Assistant to the President and CEO** Nancy L. Jacobs

**PUBLISHER** J. Samuel Huey
**Assistant to the Publisher** Alexis Meagher

## ADVERTISING SALES

**VICE PRESIDENT, ASSOCIATE PUBLISHER**
Jeff Edman
**BUSINESS MANAGER** Patricia Owen
**DIRECTOR OF ADVERTISING**
Robert Carrigan
**ASSISTANT TO THE DIRECTOR OF ADVERTISING**
Christine McGovern

**EAST**

**EASTERN ADVERTISING DIRECTOR**
Bob Ostrow (508/820-0440)
**ADMINISTRATIVE ASSISTANT/OFFICE MANAGER**
Ellen Sanderson
**Mid-Atlantic/Manhattan/Eastern Canada**
Wayne Silverman, Senior Account Manager (201/587-0090)
Thalia M. Karakitsios, Account Manager (201/587-0090)
**New England/Ohio**
Michael Carroll, Senior Account Manager (508/820-0440)
**Southeast/Pennsylvania**
Judy Sutter, Senior Account Manager (770/394-0758)

**MIDWEST/TEXAS**

**MIDWEST ADVERTISING DIRECTOR**
Harvey Diamond (972/233-3492)
**ADMINISTRATIVE ASSISTANT** Janine Goble
**Midwest**
Kathy McKay, Senior Account Manager (847/827-4477)

**WEST**

**San Francisco Bay Area/Mid-S. F. Peninsula/Oregon/Washington**
Roy Kops, Northwest Advertising Director (415/243-0500)
**ADMINISTRATIVE ASSISTANT**
Alison Fennings
**Fremont, CA/South Bay (area code 408)**
Kevin Normandeau, Account Manager (415/243-0500)
**West**
Duane Hampson, Account Representative (415/243-0500)
**Los Angeles/Orange County/ Montana/Wyoming/Western Canada**
Bill Hanck, Southwest Advertising Director (310/312-8008)
**ADMINISTRATIVE ASSISTANT** Joyce Clarke
**Southern California (San Diego), Colorado/Idaho/Nevada/Utah/ New Mexico/Arizona**
Lisa Zimmerer, Senior Account Manager (714/250-8081)

**CONSUMER ADVERTISING SALES**

**Eastern U.S.**
Edman & Company (212/551-1121)
**Michigan/Pennsylvania/Ohio**
Hartle & Heth (248/642-7273)
**Western U.S.**
Hutch Looney & Associates (213/931-3444 x227)

**PC WORLD MARKETPLACE**
**PC WORLD ACTION CARDS**
**DIRECTOR**
Pat Fales (203/857-5115)
**EASTERN ACCOUNT MANAGER**
Katherine Noto (203/857-5101)
**WESTERN ACCOUNT MANAGER**
Matthew Kurtz (203/857-5102)
**PC WORLD REPRINTS**
Michele Olk (612/582-3810)

## MARKETING

**SENIOR MARKETING MANAGER** Sandy Wong
**PRESENTATION SPECIALIST** Peter Bloch
**MARKETING COORDINATOR**
Kecia Nordgren

## CIRCULATION

**VICE PRESIDENT, CIRCULATION**
Shawne Burke Pecar
**ASSISTANT TO THE VICE PRESIDENT**
Ann Dempsey
**SENIOR PROMOTION MANAGER**
Ellen DiMatteo
**CIRCULATION BUSINESS MANAGER**
David Cobb
**SINGLE COPY SALES MANAGER**
Cheryl Stephenson
**BILLING AND RENEWAL MANAGER**
Lisa Radler
**PROMOTION MANAGERS**
Richard McCarthy, Shira Weisbach
**SINGLE COPY SALES COORDINATOR**
René Monday
**CIRCULATION ASSISTANT** Daniella Zucker
**CUSTOMER SERVICE SPECIALIST**
Shama Ali

## RESEARCH

**VICE PRESIDENT, RESEARCH** Cheryl Brink
**RESEARCH MANAGER** Jocelyn Ritchie
**RESEARCH ANALYSTS** Sandra O'Boyle, Stephen Riddle

## PRODUCTION

**VICE PRESIDENT, MANUFACTURING**
Linda Manes Goodwin
**PRODUCTION DIRECTOR** Nadia Maudsley
**PRODUCTION MANAGER** Jennifer Darnell
**DESKTOP PUBLISHING COORDINATOR**
Renée Denver

**AD TRAFFIC COORDINATOR**
Harry Topalian
**ADVERTISING INFORMATION MANAGER**
Dan Gordon
**ADVERTISING INFORMATION ASSISTANT**
Yuliya Korentsvit

## PC WORLD ONLINE

**EXECUTIVE DIRECTOR, OPERATIONS**
Madeleine Buckingham
**DIRECTOR, CIRCULATION**
Noël McLaughlin
**DIRECTOR, MARKETING** Scott Danish
**OPERATIONS MANAGER** Carla Lieberman
**DIRECTOR OF INSIDE SALES**
Diane Templin
**DIRECTOR OF MARKET DEVELOPMENT**
Stephen Shore
**NATIONAL ACCOUNTS, EAST COAST**
Sandy Schackman
**NATIONAL ACCOUNTS, TIPWORLD**
Charley Hoeffer
**ACCOUNT EXECUTIVE** Melissa Gruber
**ADVERTISING COORDINATOR** Batel Libes
**AUDIENCE DEVELOPMENT MANAGER**
Declan Fox
**APPLICATIONS DEVELOPER** Matt Turner
**PROJECT MANAGER** Dave Harpe
**MARKETING COORDINATOR** Cheryl Allen
**CUSTOMER SERVICE COORDINATOR**
Paul O'Neil
**BUSINESS DEVELOPMENT ANALYST**
Angie Weber
**FINANCIAL ANALYST** Tobias Harting

## ADMINISTRATION

**HUMAN RESOURCES AND INFORMATION SYSTEMS**
**VICE PRESIDENT** Richard Willoughby
**MANAGER** Thalia Ohara
**REPRESENTATIVE** Christine Selfridge
**VICE PRESIDENT, CIO** Henri Froissart
**DIRECTOR INFORMATION SYSTEMS**
Norman Noble
**NETWORK MANAGER** Rodney Barnes
**INFORMATION SYSTEMS SPECIALISTS**
Pearl Chan, Stan Erhart

**FINANCE**
**SENIOR VICE PRESIDENT, CFO** Vicki Peilen
**ACCOUNTING/OPERATIONS MANAGER**
Pat Murphy
**ACCOUNTING/FACILITIES MANAGER**
Michelle Reyes


## Advertiser Index A-Z

Get more information—circle the appropriate number on the reader service card.


| Reader service number | | Page |
|---|---|---|
| – | Acer America | 85 |
| – | Acer Components | 35 |
| – | Acer Components | 37 |
| – | Adaptec Inc. | 16 |
| 3 | ADI Systems Inc. | 52 |
| 12 | Adobe Systems Inc. | 77 |
| 32 | Adobe Systems Inc. | 89 |
| 16 | Advanced Micro Devices | 28-29 |
| 14 | AEC | 259 |
| 19 | AIMS Labs Inc. | 317 |
| 9 | ALR | 27 |
| 26 | American Airlines | 193 |
| – | American Express Small Business | 202 |
| 8 | APC | 49 |
| 17 | APC | 120-121 |
| 20 | ArtMedia USA-Pacific Technology | 185 |
| – | AT & T | 245 |
| 5 | ATI Technologies | 277 |
| – | AverMedia | 293 |
| – | Avery Dennison | 199 |
| – | Avery Dennison | 201 |
| – | Avery Dennison | 203 |
| – | Banner Blue | 309 |
| 91 | Caere Corporation | 279 |
| – | Canon Computer Systems | 2-3 |
| – | Chevrolet Monte Carlo | 165 |
| – | Compaq Computer Corporation | 78-79 |
| – | Compaq Direct Plus | 187 |
| 44 | Computer Discount Warehouse | 230-231 |
| 46 | Computer Discount Warehouse | 329 |
| 68 | Computer Discount Warehouse | 330-331 |
| 78 | Corel Corporation | 176-177 |
| 54 | Creative Labs Inc. | 107 |
| 59 | Creative Labs Inc. | 109 |
| 69 | Creative Labs Inc. | 111 |
| 56 | Crucial Technology | 93 |
| 74 | Cybermax | 30-31 |
| 81 | Dataviz, Inc. | 135 |
| 80 | Dataviz, Inc. | 285 |
| – | Dell | C5-C8 |
| – | Dell | 44-45 |
| – | Dell | 72-73 |
| – | Dell | 180-181 |


PC World is a publication of International Data Group, the world's leading information technology media, research and exposition company. International Data Group publishes over 275 computer publications in over 75 countries. Sixty million people read one or more International Data Group publications each month. International Data Group's publications include: **Argentina:** Annuário de Informática, Computerworld Argentina, PC World Argentina; **Australia:** Australian Macworld, Australian PC World, Australian Reseller News, Computerworld, Computerworld IDD Australia, Digital News Australia, IT Casebook, Network World, Publish, Webmaster; **Austria:** Computerwelt Osterreich, Networks Austria, PC Tip Austria; **Bangladesh:** PC World Bangladesh; **Belarus:** PC World Belarus; **Brazil:** Annuário de Informática, Computerworld, Macworld, Network World Brazil, PC Player, PC World, Publish, Reseller News Brazil, Supergamepower; **Bulgaria:** Computerworld Bulgaria, Macworld Bulgaria, Network World Bulgaria, PC World Bulgaria; **Canada:** CIO Canada, Client/Server World, ComputerWorld Canada, InfoWorld Canada, NetworkWorld Canada, WebWorld; **Chile:** Computerworld Chile, PC World Chile; **Colombia:** Computerworld Colombia, PC World Colombia; **Costa Rica:** PC World Centro America; **The Czech and Slovak Republics:** Computerworld Czechoslovakia, internet 4U Czech, Macworld Czech Republic, PC World Czechoslovakia; **Denmark:** Client Server Denmark, Communications World Danmark, Computerworld Danmark, Macworld Danmark, PC World Danmark, Windows Special Denmark, Techworld Denmark; **Dominican Republic:** PC World Republica Dominicana; **Ecuador:** PC World Ecuador; **Egypt:** Computerworld Middle East, PC World Middle East; **El Salvador:** PC World Centro America; **Finland:** MikroPC, Tietoverkko, Tietoviikko; **France:** Distributique, Hebdo, Info PC, Le Monde Informatique, L M I Magazine, Macworld, Reseaux & Telecoms, VAR & SSII Magazine, WebMaster France; **Germany:** Computer Partner, Computerwoche, Computerwoche Extra, Computerwoche FOCUS, Global Online, Macwelt, PC Welt, PC Welt Special Issue; **Greece:** Amiga Computing, GamePro Greece; **Guatemala:** PC World Centro America; **Honduras:** PC World Centro America; **Hong Kong:** Computerworld Hong Kong, PC World Hong Kong, Publish in Asia; **Hungary:** ABCD CD-ROM, Computerworld Szamitastechnika, INteRNeTTD Hungary, PC World Hungary, PC-X Magazin Hungary; **Iceland:** Tolvuheimur PC World Island; **India:** CW Premier 200 Year Book India, Information Communications World, Information Systems Computerworld, Macworld India, PC World India, Publish in Asia; **Indonesia:** InfoKomputer PC World, Komputek Computerworld, Publish in Asia; **Ireland:** ComputerScope, InfoLive Ireland, PC Live!; **Israel:** Macworld Israel, People & Computers/Computerworld; **Italy:** Computerworld Italia, Macworld Italia, Networking Italia, PC World Italia; **Japan:** DTP World, HP Open World Japan, Macworld Japan, Nikkei Personal Computing, OS/2 World Japan, SunWorld Japan, Windows NT World, Windows World Japan; **Kenya:** PC World East African; **Korea:** Hi-Tech Information, Macworld Korea, PC World Korea; **Latvia:** PC World DatorPasaule Latvia; **Macedonia:** PC World Macedonia; **Malaysia:** Computerworld Malaysia, PC World Malaysia, Publish in Asia; **Malta:** PC World Malta; **Mexico:** Computerworld Mexico, Macworld Mexico, PC World Mexico; **Myanmar:** PC World Myanmar; **Netherlands:** Computer! Totaal, InfoWorld Netherlands, LAN Magazine, LAN World Buyers Guide, Net, Macworld Netherlands, Totaal! Beurskrant Netherlands, WebWereld; **New Zealand:** Absolute Beginners Guide and Plain & Simple Series, Computer Buyer, Computer Industry Directory, Computerworld New Zealand, MTB, Network World, PC World New Zealand; **Nicaragua:** PC World Centro America; **Norway:** CAD/CAM World Norge, Computerworld Norge, CW Rapport, Datamagasinet, Financial Rapport, Kursguide Norge, Macworld Norge, Multimediaworld World Norway, PC World Ekspress Norge, PC World Nettverk, PC World Norge, PC World ProduktGuide Norge; **Pakistan:** Computerworld Pakistan; **Panama:** PC World Panama; **People's Republic of China:** China Computer Users, China Computerworld, China Computerworld Daily, China InfoWorld, China Telecom World Weekly, Computer & Communication, Electronic Design China, Electronics Today, Electronics Weekly, Electronics Weekly, Game Software, Network World China, PC World China, Popular Computer Week, Software Weekly, Software World, Telecom World; **Peru:** Computerworld Peru, PC World Profesional Peru, PC World SoHo Peru; **Philippines:** Click!, Computerworld Philippines, PC World Philippines, Publish in Asia; **Poland:** Computerworld Poland, Computerworld Special Report Poland, Cyber, Macworld Poland, Networld Poland, PC World Komputer; **Portugal:** Cerebro/PC World, Computerworld/Correio Informático, Dealer World Portugal, Mac*In/PC*In Portugal, Multimedia World; **Puerto Rico:** PC World Puerto Rico; **Romania:** Computerworld Romania, PC World Romania, Telecom Romania; **Russia:** CIO Russia, Computerworld Russia, Mir PK, Publish, Seti; **Singapore:** Computerworld Singapore, PC World Singapore, Publish in Asia; **Slovenia:** Monitor; **South Africa:** Computing SA, Network World SA, PC World South Africa; **Spain:** Communicaciones World España, Computerworld España, Dealer World España, Macworld España, PC World España; **Sri Lanka:** Infolink PC World; **Sweden:** CAP&Design, Computer Sweden, Corporate Computing Sweden, Internetworld Sweden, it.branschen, Macworld Sweden, MaxiData Sweden, MikroDatorn, Nätverk & Kommunikation, PCaktiv, PC World Sweden, PC Windows World Sweden; **Switzerland:** Computerworld Schweiz, Macworld Schweiz, PCtip; **Taiwan:** Computerworld Taiwan, Macworld Taiwan, NEW ViSiDN/Publish, PC World Taiwan, Windows World Taiwan; **Thailand:** Publish in Asia, Thai Computerworld; **Turkey:** Computerworld Turkiye, Macworld Turkiye, Network World Turkiye, PC World Turkiye; **Ukraine:** Computerworld Kiev, Multimedia World Ukraine, PC World Ukraine; **United Kingdom:** Acorn User UK, Amiga Action UK, Amiga Computing UK, Apple Talk UK, Macworld, Parents and Computers UK, PC Advisor, PC Home, PowerPC Business, PSX Pro, The WEB; **United States:** Cable in the Classroom, CIO Magazine, Computerworld, Computerworld Client/Server Journal, DOS World, Federal Computer Week, GamePro Magazine, InfoWorld, JavaWorld, Macworld, NetscapeWorld, Network World, PC Games, PC World, Publish, Video Event, SunWorld Online, THE WEB Magazine, WebMaster and WEBNOW; **Uruguay:** InfoWorld Uruguay; **Venezuela:** Computerworld Venezuela, PC World Venezuela; and **Vietnam:** PC World Vietnam.

# INDEX


| Reader service number | | Page |
|---|---|---|
| – | Dell | 254 |
| – | Dell Direct | 161A-161B |
| – | Dell Direct | 196-197 |
| 37 | DeLorme | 87 |
| 84 | DTK | 65 |
| – | EPS Technologies | 188A-F |
| – | Epson America, Inc. | 222-223 |
| – | EXABYTE/Eagle Division | 295 |
| 100 | Fujitsu Computer Products of America | 56-57 |
| 101 | Fujitsu PC Corporation | 153-157 |
| 103 | Fujitsu PC Corporation | 195 |
| – | Gateway 2000 | 97-104 |
| – | Gateway 2000 | 105 |
| – | Gateway 2000 | 269-272 |
| – | Gateway 2000 | 273 |
| – | Gateway 2000 | 289-290 |
| 125 | Hansol | 117 |
| – | Hewlett-Packard | 112-113 |
| – | Hewlett-Packard | 147 |
| – | Hewlett-Packard | 149 |
| 109 | Hitachi | 54-55 |
| 110 | Hyundai Electronics America | 221 |
| – | Imation | 32 |
| 112 | Info Imaging Technologies | 26 |
| – | Intel | 50-51 |
| 116 | Intergraph | 118-119 |
| 170 | KDS | 215 |
| 115 | KeyStone Learning Systems | 314 |
| 128 | Kingston Technology Corp. | 307 |
| – | LA TRADE | 326 |
| 176 | LA Vision | 316 |
| 141 | Lexmark | 243 |
| 96 | LG Electronics U.S.A., Inc. | 42 |
| 108 | Liyama | 229 |
| – | Lotus | 183 |
| 143 | Matrox Graphics, Inc. | 40-41 |
| 135 | Mega Image Systems, Inc. | 312 |
| 147 | MegaHaus Hard Drives | 328 |
| 149 | Micron Electronics | 9 |
| 145 | Micron Electronics | 10-11 |
| – | Micron Electronics | 167-172 |
| 160 | Micron Electronics | 252-253 |
| – | Microsoft | C2-P1 |
| – | Microsoft Corporation | 249 |
| – | Microtek Lab, Inc. | 83 |
| – | Microwarehouse | 350 |
| 169 | Midwest Computer Works | 325 |
| – | Minolta | 24 |
| – | Minolta | 25 |
| 153 | Minolta Peripheral Products | 12-13 |
| 150 | Miro Computer Product | 184 |
| 155 | Mitsubishi Electronics America | 263 |
| 223 | NEC Electronics | 266-267 |
| 205 | NEC Monitors | 236-237 |
| 180 | NEC PowerMate | 90-91 |
| 163 | NEC Printer | 38-39 |
| 174 | Newcom | 163B |
| 161 | Nomai | 303 |
| – | NRI Schools | 327 |
| 121 | Oldsmobile Silhouette | 15 |
| 171 | Palm Computing | 217 |
| 166 | Panasonic | 287 |
| 168 | Para Systems | 258 |
| 195 | PC America | 332 |
| 165 | PC Connection | 318-319 |
| 172 | PC World Online | 291 |
| 129 | PCs Compleat | 321-324 |
| 181 | Philips Electronics | 95 |
| 212 | PKWARE | 34 |
| – | Plymouth Brand Vehicles | 212-213 |
| 191 | PowerQuest | 311 |
| 196 | PowerQuest | 313 |
| 192 | Premio Computers | 265 |
| 152 | Princeton Graphic Systems | 4-5 |
| 178 | Princeton Graphic Systems | 115 |
| 184 | ProGen Systems | 36 |
| 146 | Qualcomm | 198 |
| 193 | Qualcomm | 297 |
| – | Quantex | 137-142 |
| 189 | Quarterdeck Office Systems | 67 |
| 185 | Quarterdeck Office Systems | 69 |
| 190 | Quarterdeck Office Systems | 71 |
| 204 | Ricoh Corporation | 114 |
| 194 | Rose Electronics | 283 |
| 188 | Seiko Instruments | 116 |
| 207 | Shinho | 75 |
| 211 | Smith Micro | 260 |
| – | SPSS | 281 |
| 200 | SSI Products, Inc. | 132 |
| 210 | STB Systems | 250 |
| 232 | Syncronys SoftCorp | 46 |
| 214 | SYS Technology | 310 |
| 221 | Telecommuting and Home Office Expo | 349 |
| 222 | Televideo Inc. | 129 |
| 236 | Thompson Cigar | 294 |
| 233 | Toshiba America | 200 |
| 234 | Toshiba America Electronic Components, Inc. | 133 |
| 240 | Twinhead Int Corporation | 305 |
| – | U.S. Robotics | 299-302 |
| 238 | U.S. Robotics Mobile Communications Corp. | 239 |
| 232 | U.S. Robotics Mobile Communications Corp. | 241 |
| 250 | Umax Technologies | 219 |
| 237 | Union Camp | 204 |
| 241 | USA Flex | 320 |
| 255 | V Communications, Inc. | 315 |
| 260 | Value Web | 163A |
| 245 | Video Professor | 48 |
| 224 | ViewSonic | 20-21 |
| 246 | ViewSonic | 246 |
| 187 | Visioneer | 22 |
| 251 | Western Digital | 256 |
| 254 | WinBook | 18-19 |
| 257 | Xerox Corporation | 131 |


## Advertiser Index by Product Category

Get more information—circle the appropriate number on the reader service card.

### HARDWARE

#### Boards/Cards/Chips


| | | |
|---|---|---|
| 16 | Advanced Micro Devices | 28-29 |
| 5 | ATI Technologies | 277 |
| 54 | Creative Labs Inc. | 107 |
| 59 | Creative Labs Inc. | 109 |
| 69 | Creative Labs Inc. | 111 |
| 56 | Crucial Technology | 93 |
| – | Intel | 50-51 |
| 128 | Kingston Technology Corp. | 307 |
| 143 | Matrox Graphics, Inc. | 40-41 |
| 223 | NEC Electronics | 266-267 |
| 174 | Newcom | 163B |
| 210 | STB Systems | 250 |


#### Communication


| | | |
|---|---|---|
| 112 | Info Imaging Technologies | 26 |
| – | U.S. Robotics | 299-302 |
| 238 | U.S. Robotics Mobile Communications Corp. | 239 |
| 232 | U.S. Robotics Mobile Communications Corp. | 241 |


#### Desktop Computers


| | | |
|---|---|---|
| 9 | ALR | 27 |
| – | Dell | C5-C8 |
| – | Dell | 44-45 |
| – | Dell | 72-73 |
| – | Dell | 180-181 |
| – | Dell | 254 |
| – | Dell Direct | 161A-161B |
| – | Dell Direct | 196-197 |
| 84 | DTK | 65 |
| – | EPS Technologies | 188A-F |
| – | Gateway 2000 | 97-104 |
| – | Gateway 2000 | 105 |
| – | Gateway 2000 | 273 |
| – | Gateway 2000 | 289-290 |
| – | Hewlett-Packard | 112-113 |
| – | Hewlett-Packard | 147 |
| – | Hewlett-Packard | 149 |
| 116 | Intergraph | 118-119 |
| – | Micron Electronics | 167-172 |
| – | Microwarehouse | 350 |
| 180 | NEC PowerMate | 90-91 |
| 192 | Premio Computers | 265 |
| 184 | ProGen Systems | 36 |
| – | Quantex | 137-142 |
| 214 | SYS Technology | 310 |
| 241 | USA Flex | 320 |


#### Desktop Publishing


| | | |
|---|---|---|
| – | Compaq Direct Plus | 187 |
| 74 | Cybermax | 30-31 |
| 80 | Dataviz, Inc. | 285 |


#### File Servers


| | | |
|---|---|---|
| 160 | Micron Electronics | 252-253 |


#### Laptop/Notebook


| | | |
|---|---|---|
| – | Compaq Computer Corporation | 78-79 |
| – | Dell Direct | 161A-161B |
| – | Dell Direct | 196-197 |
| – | EPS Technologies | 188A-F |
| 101 | Fujitsu PC Corporation | 153-157 |
| 103 | Fujitsu PC Corporation | 195 |
| – | Gateway 2000 | 97-104 |
| – | Gateway 2000 | 105 |
| – | Gateway 2000 | 269-272 |
| – | Gateway 2000 | 273 |
| – | Gateway 2000 | 289-290 |
| 109 | Hitachi | 54-55 |
| 135 | Mega Image Systems, Inc. | 312 |
| 145 | Micron Electronics | 10-11 |
| – | Micron Electronics | 167-172 |
| 171 | Palm Computing | 217 |
| 233 | Toshiba America | 200 |
| 240 | Twinhead Int Corporation | 305 |
| 254 | WinBook | 18-19 |


#### Local Area Networks


| | | |
|---|---|---|
| 194 | Rose Electronics | 283 |


#### Monitors/Displays


| | | |
|---|---|---|
| – | Acer America | 85 |
| – | Acer Components | 35 |
| – | Acer Components | 37 |
| 3 | ADI Systems Inc. | 52 |
| 20 | ArtMedia USA-Pacific Technology | 185 |
| 125 | Hansol | 117 |
| 110 | Hyundai Electronics America | 221 |
| 170 | KDS | 215 |
| 96 | LG Electronics U.S.A., Inc. | 42 |
| 108 | Liyama | 229 |
| 155 | Mitsubishi Electronics America | 263 |
| 205 | NEC Monitors | 236-237 |
| 166 | Panasonic | 287 |
| 181 | Philips Electronics | 95 |
| 152 | Princeton Graphic Systems | 4-5 |
| 178 | Princeton Graphic Systems | 115 |
| 207 | Shinho | 75 |
| 222 | Televideo Inc. | 129 |
| 234 | Toshiba America Electronic Components, Inc. | 133 |
| 224 | ViewSonic | 20-21 |
| 246 | ViewSonic | 246 |


#### Multimedia


| | | |
|---|---|---|
| 176 | LA Vision | 316 |
| 150 | Miro Computer Produc | 184 |
| 200 | SSI Products, Inc. | 132 |


#### Other


| | | |
|---|---|---|
| – | AverMedia | 293 |


#### Peripherals/Sharing Devices


| | | |
|---|---|---|
| – | Adaptec Inc. | 16 |
| 194 | Rose Electronics | 283 |


#### Power/Protection


| | | |
|---|---|---|
| 8 | APC | 49 |
| 17 | APC | 120-121 |
| 168 | Para Systems | 258 |


#### Printers/Plotters


| | | |
|---|---|---|
| – | Canon Computer Systems | 2-3 |
| – | Epson America, Inc. | 222-223 |
| 100 | Fujitsu Computer Products of America | 56-57 |
| 141 | Lexmark | 243 |
| 153 | Minolta Peripheral Products | 12-13 |
| 163 | NEC Printer | 38-39 |
| 204 | Ricoh Corporation | 114 |
| 188 | Seiko Instruments | 116 |
| 257 | Xerox Corporation | 131 |


#### Scanners/Digitizers


| | | |
|---|---|---|
| – | Microtek Lab, Inc. | 83 |
| – | Minolta | 24 |
| – | Minolta | 25 |
| 250 | Umax Technologies | 219 |
| 187 | Visioneer | 22 |


#### Storage/Backup Devices


| | | |
|---|---|---|
| – | EXABYTE/Eagle Division | 295 |
| – | Imation | 32 |
| 147 | MegaHaus Hard Drives | 328 |
| 161 | Nomai | 303 |
| 251 | Western Digital | 256 |


### SOFTWARE

#### Communications/Fax/Modems


| | | |
|---|---|---|
| 193 | Qualcomm | 297 |
| 190 | Quarterdeck Office Systems | 71 |
| 211 | Smith Micro | 260 |

| Reader service number | | Page |
|---|---|---|
| 260 | Value Web | 163A |
| | **Dataconversion** | |
| 81 | Dataviz, Inc. | 135 |
| | **Desktop Mapping** | |
| 37 | DeLorme | 87 |
| | **Desktop Publishing** | |
| 12 | Adobe Systems Inc. | 77 |
| 32 | Adobe Systems Inc. | 89 |
| | **Education** | |
| 245 | Video Professor | 48 |
| | **Management** | |
| 195 | PC America | 332 |
| | **Multimedia** | |
| 176 | LA Vision | 316 |
| | **Operating Systems** | |
| 255 | V Communications, Inc. | 315 |
| | **Other** | |
| – | Banner Blue | 309 |
| | **Schedule Software** | |
| 14 | AEC | 259 |
| | **Software Suites** | |
| 78 | Corel Corporation | 176-177 |
| – | Lotus | 183 |
| – | Microsoft | C2-P1 |
| 14 | AEC | 259 |
| | **Spreadsheets/Templates/Forms** | |
| 91 | Caere Corporation | 279 |
| | **Statistics** | |
| – | SPSS | 281 |
| | **Utilities** | |
| 14 | AEC | 259 |
| 212 | PKWARE | 34 |
| 191 | PowerQuest | 311 |
| 196 | PowerQuest | 313 |
| 189 | Quarterdeck Office Systems | 67 |
| 185 | Quarterdeck Office Systems | 69 |
| 232 | Syncronys SoftCorp | 46 |
| 255 | V Communications, Inc. | 315 |
| | **Video** | |
| 19 | AIMS Labs Inc. | 317 |
| 115 | KeyStone Learning Systems | 314 |
| 211 | Smith Micro | 260 |
| | **Web Authoring Tools** | |
| 260 | Value Web | 163A |
| | **Windows** | |
| 212 | PKWARE | 34 |
| | **Word Processing/Aids** | |
| 78 | Corel Corporation | 176-177 |

**MISCELLANEOUS**

| Reader service number | | Page |
|---|---|---|
| | **Airlines** | |
| 26 | American Airlines | 193 |
| | **Automobiles** | |
| – | Chevrolet Monte Carlo | 165 |
| 121 | Oldsmobile Silhouette | 15 |
| – | Plymouth Brand Vehicles | 212-213 |
| | **Business Services** | |
| – | American Express Small Business | 202 |
| | **Computer Accessories** | |
| 237 | Union Camp | 204 |
| | **Mail Order** | |
| 44 | Computer Discount Warehouse | 230-231 |
| 46 | Computer Discount Warehouse | 329 |
| 68 | Computer Discount Warehouse | 330-331 |
| 116 | Intergraph | 118-119 |
| – | LA TRADE | 326 |
| 147 | MegaHaus Hard Drives | 328 |
| 169 | Midwest Computer Works | 325 |
| – | NRI Schools | 327 |
| 165 | PC Connection | 318-319 |
| 129 | PCs Compleat | 321-324 |
| 236 | Thompson Cigar | 294 |
| | **Online Services** | |
| – | AT & T | 245 |
| 172 | PC World Online | 291 |
| | **Other** | |
| – | Microsoft Corporation | 249 |
| 146 | Qualcomm | 198 |
| | **Supplies** | |
| – | Avery Dennison | 199 |
| – | Avery Dennison | 201 |
| – | Avery Dennison | 203 |
| 237 | Union Camp | 204 |
| | **Trade Shows** | |
| 221 | Telecommuting and Home Office Expo | 349 |
| | **Training** | |
| 115 | KeyStone Learning Systems | 314 |
| – | NRI Schools | 327 |


## Products Featured in Editorial

Get more information—circle the appropriate number on the reader service card.


| Reader service number | | Page |
|---|---|---|
| | **3-D Graphics** | |
| 818 | Fractal Design Ray Dream Designer 4.2 | 128 |
| | **Accounting** | |
| – | Intuit QuickBooks Pro 5.0 | 127 |
| | **AntiVirus** | |
| 811 | Symantec Norton AntiVirus 2.0 | 126 |
| | **Business Cards** | |
| – | My Professional Business Cards, MySoftware Company | 201 |
| | **Business Graphics** | |
| 816 | Visio 4.0 | 127 |
| | **Business Planning** | |
| – | Smart Business Plan, American Institute | 203 |
| | **CAD** | |
| 817 | Autodesk AutoCAD 13 | 127 |
| | **CD-ROM Drives** | |
| 609 | Acer CD616A | 144 |
| 608 | Aztech Labs Zeta Super 12X | 144 |
| 607 | Creative Labs Infra 1800 | 144 |
| 798 | HP SureStore CD-Writer | 125 |
| 799 | Panasonic PD-CD | 125 |
| 610 | Pioneer DR-444 | 144 |
| 603 | Pioneer DR-466 | 144 |
| 601 | Plextor 12Plex PX-12CSi | 144 |
| 795 | Plextor Corp. 12Plex | 125 |
| 606 | Samsung SCR-1231 | 144 |
| 611 | Sony COU-511 16X Max | 144 |
| 604 | Teac CD-512E | 144 |
| 602 | Toshiba XM-3801B-S | 144 |
| 605 | Toshiba XM-5702B | 144 |
| 612 | Wearnes CDD-1620 | 144 |
| | **Children's Educational CD-ROM** | |
| 847 | JumpStart series, Knowledge Adventure | 134 |
| | **CPU Utility** | |
| 637 | 110 Alert, CPU-Cool 1.9W, PC Power & Cooling | 268 |
| 638 | FanCard II, TS MicroTech | 268 |
| 639 | HeatSentry, Macrotron Technology Inc. | 268 |
| | **Database** | |
| 807 | Microsoft Access 7.0 | 126 |
| | **Desktop Computers** | |
| 696 | ACMA zPower Pro-200 | 208 |
| 782 | AST Bravo LC 6233 | 62 |
| 694 | CLR Infinity P-200 MMX | 208 |
| 710 | CyberMax Cyrix Max C3 P166+ | 224 |
| 712 | CyberMax Max I6/P200MMX | 224 |
| 700 | Dell Dimension M200a | 224 |
| 678 | Dell Dimension XPS H266 | 208 |
| 698 | Dell Dimension XPS M166s | 224 |
| 640 | Dell Dimension XPS M166s | 264 |
| 679 | Dell Dimension XPS M200s | 208 |
| 785 | Dell Dimension XPS M233s | 62 |
| 680 | Dell Dimension XPS Pro200n | 208 |
| 701 | Dell Optiplex GS+ 200L | 224 |
| 685 | Dell Optiplex GX Pro 200 | 208 |
| 681 | Dell Optiplex Gxi 200M | 208 |
| 713 | DirectWave MVP P-133 | 224 |
| 836 | Gateway 2000 Family PC | 130 |
| 786 | Gateway 2000 G5-233 | 62 |
| 684 | Gateway 2000 G6-200 | 208 |
| 783 | Gateway 2000 G6-233M | 62 |
| 683 | Gateway 2000 G6-266 M | 208 |
| 704 | Gateway 2000 P5-166 | 224 |
| 705 | Gateway 2000 P5-200 | 224 |
| 788 | Gateway 2000 P5 line | 124 |
| 641 | Hewlett Packard Pavilion 5320 | 264 |
| 643 | Hewlett Packard Pavilion 7350P | 264 |
| 642 | Hewlett Packard Pavilion 7370V | 264 |
| 706 | HP Pavilion 5320 | 224 |
| 688 | HP Pavilion 7370V | 208 |
| 687 | HP Vectra VA 6/200 MT | 208 |
| 707 | HP Vectra VE 5/133 | 224 |
| – | IBM Aptiva C8E, | |
| – | IBM PC 350 | 224 |
| 709 | Kingdom 6x86 P166+ Super Value | 224 |
| 702 | Micron Home MPC P200 | 224 |
| 699 | Micron Millennia LXA P166 | 224 |
| 682 | Micron Millennia Pro2 200 B | 208 |
| 708 | Midwest Micro P5-200 | 224 |
| 693 | Multiwave P-200 MMX | 208 |
| 691 | Netis N6200PCI | 208 |
| 714 | Polywell Poly 500 QX | 224 |
| 697 | Polywell Poly K6200Mx | 208 |
| 711 | Quantex QP5/200MMX SM-3 | 224 |
| 787 | Quantex QP5/233 SM-3 | 62 |
| 703 | Quantex QP6/200 SM-1 | 224 |
| 689 | Quantex QP6/200 SM-4 | 208 |
| 784 | Quantex QP6/233 SM-3 | 62 |
| 692 | Sys Technology Performance Pro 200 | 208 |
| 695 | Sys Technology Performance Pro 266 | 208 |
| 690 | Sys Technology Sys Performance P200T2M | 208 |
| 716 | Tangent MediaGem | 224 |
| 715 | Vektron Home Office P133 | 224 |
| | **Desktop Publishing** | |
| 813 | Adobe PageMaker 6.5 | 127 |
| | **Digital Camera** | |
| 839 | Canon PowerShot 600 | 134 |
| | **Drawing** | |
| 815 | CorelDraw 7 | 127 |
| | **DVD** | |
| 757 | Hi-Val Home Entertainment System | 84 |
| | **Electronic Document Distribution** | |
| 828 | Adobe Acrobat 3.0 | 128 |
| 852 | Adobe Acrobat Reader 3.0 | 136 |
| | **Email** | |
| – | Hotmail | 199 |
| 850 | Netscape Mail | 136 |
| | **Fax/Communications Software** | |
| 808 | Symantec WinFax Pro 7.5 | 126 |
| | **File Utility** | |
| 760 | PKZip for Windows 2.5 with Quick View Plus 4.0, PKWare | 86 |
| | **Forms** | |
| 920 | Caere OmniForm 2.0 for Windows 3.x, 95 | 128 |
| | **Games/Entertainment** | |
| 844 | Duke Nukem 3D, Apogee Software | 134 |
| 843 | Microsoft Flight Simulator, Microsoft | 134 |
| 628 | Virtual Graceland, Highway One Media Entertainment | 262 |
| 845 | Where in the USA is Carmen Sandiego?, Brøderbund Software | 134 |
| 627 | You Don't Know Jack Movies, Berkeley Systems | 261 |
| | **Graphics Boards** | |
| 744 | ATI 3D Xpression+ PC2TV | 255 |

Reader service number — Page

767 Diamond Multimedia Fire GL 1000 ..... 106
740 Diamond Stealth 3D 3000XL ..... 255
745 Diamond Stealth 3D Pro 2000 ..... 255
792 Diamond Stealth64 Video 3000 ..... 124
738 Hercules Terminator 3D/DX ..... 255
765 Matrox Millennium II .... 106
743 Matrox Millennium ..... 255
739 Matrox Mystique ..... 255
742 STB Lightspeed 128 ..... 255
737 STB Nitro 3D ..... 255
741 STB Velocity 3D ..... 255
746 VideoLogic GrafixStar 600 ..... 255

**Graphics Software**
772 Adobe Illustrator 7 ..... 115
756 Font F/X, DCSI ..... 82

**Groupware**
826 Lotus Notes 4.5 ..... 128

**Hard Drive**
796 Western Digital Caviar .... 125

**Image Editing**
819 Adobe Photoshop 4.0 ..... 128

**In-flight Power Adaptors**
- Absolute Battery ..... 64
- Lind Electronics ..... 64
- Universal Sources ..... 64
- Xtend Micro Products ..... 64

**Input Device**
791 Microsoft IntelliMouse .... 124

**Internet Service Provider**
849 AT&T WorldNet Service ... 136

**Internet Utility**
854 Pretty Good Privacy 2.6 ... 136

**Label Maker**
- P-Touch Home & Hobby II, Brother ..... 201

**Mail Order**
631 Dell Computer ..... 161
632 Gateway 2000 ..... 161
633 Micron Electronics ..... 161
- PC Connection .....
634 Polywell Computer ..... 161
635 Quantex ..... 161
636 Sys Technology ..... 161

**Mapping**
- MapBlast ..... 203

**Modems**
621 Boca 33.6 Game/ Business Modem ..... 257
616 Diamond Multimedia SupraExpress 336i Sp ..... 257
620 Hayes Accura 336 Total Gaming Solution ..... 257
615 Hayes Optima 336B ..... 257
833 Megahertz All-Points Card, U.S. Robotics ..... 130
758 Ositech's Trumpcard Five of Diamonds, ..... 84
622 Practical Peripherals Practical 336 Voice/Data/ Fax ..... 257
619 Practical Peripherals Practical Internet Kit ..... 257
617 Shark Multimedia BabyTiger-336R ..... 257
613 U.S. Robotics Courier V.Everything ..... 257
793 U.S. Robotics Sportster Voice 28.8 ..... 125
618 Wisecom Accelerator IV ... 257

Reader service number — Page

614 Zoom ZoomfaxModem V.34I Plus ..... 257

**Monitor**
673 Continental DigiView 1709D ..... 251
670 Dell UltraScan 1000HS ... 251
- IBM P70 ..... 251
668 Iiyama Vision Master Pro 17 ..... 251
672 Mitsubishi Diamond Pro 87XTM ..... 251
790 NEC MultiSync M700 .... 124
676 NEC MultiSync P750 ..... 251
789 NEC MultiSync XV15+ .... 124
671 Panasonic PanaSync S17 .. 251
675 Princeton Graphic EO75 ... 251
674 ViewSonic 17GS ..... 251
669 ViewSonic PT775 ..... 251

**Multifunction Device**
- HP OfficeJet 570 ..... 201
800 HP OfficeJet LX 350 ..... 125

**News/Information Service**
- PointCast Network 1.1 .....

**Notebook Computers**
734 Acer AcerNote Light 382 ..... 232
726 ARM TS96CD-133T ..... 232
727 Compaq Armada 1130T ... 232
725 Compaq Presario 1080 ... 232
731 CTX EzBook 720CS ..... 232
717 Dell Latitude LM M166ST ..... 232
724 Dell Latitude Xpi CD M166ST ..... 232
718 Dell Latitude XPi P133ST ..... 232
733 Gateway 2000 Solo 2100 S5-120 ..... 232
722 Gateway 2000 Solo 2100 S5-150 ..... 232
730 Hitachi E133T/1000 ..... 232
728 HP OmniBook 5500CS ... 232
723 HP OmniBook 800CT .... 232
- IBM ThinkPad 760 ..... 130
735 Mega Image Megabook 880 ..... 232
754 Toshiba Libretto ..... 81
736 Toshiba Satellite 200 CDS ..... 232
732 Toshiba Satellite Pro 430CDS ..... 232
830 Toshiba Satellite Pro ..... 130
720 Transmonde Vibrant 133T ..... 232
721 WinBook FX ..... 232
719 WinBook LM ..... 232
729 WinBook XP5 Pro P150 ..... 232

**OCR**
821 Caere OmniPage Pro 7.0 ..... 128

**Online Service**
848 America Online ..... 136

**Operating System**
803 Microsoft Windows 95 .... 126
825 Microsoft Windows NT Server 4.0 ..... 128

**Palmtop Computer Light**
752 mini-PCL3 Ultimate Palmtop Computer Light, ASF Associates ..... 94

**PC/TV Add-in card**
- ATI-TV, ATI Technologies ..... 203

**Personal Digital Assistant**
831 U.S. Robotics PalmPilot ... 130

Reader service number — Page

**Personal Finance**
- Intuit Quicken Deluxe 6 ..... 134

**Personal Information Manager**
809 Lotus Organizer 97 ..... 126

**Presentations**
771 Active Presenter, Software Publishing Corp. ..... 110
814 Microsoft PowerPoint 97 ..... 127
747 SPSS Smart Viewer ..... 92

**Printers**
755 Alps MD-2300 Masterpiece, Alps Electric (USA), Inc. ..... 81
754 Epson Stylus Photo ..... 81
823 HP Color LaserJet 5M ..... 128
657 HP DeskJet 1600CM ..... 247
837 HP DeskJet 820 ..... 134
824 HP LaserJet 5M ..... 128
838 HP LaserJet 6P/6MP ..... 134
- IBM Network Printer 12 ..... 247
654 Lexmark Optra S 1250 .... 247
653 Lexmark Optra S 1650 .... 247
656 Okidata OkiPage 16n ..... 247
658 Tektronix Phaser 350 ..... 247
661 Tektronix Phaser 550 ..... 247
660 Xerox XPrint 4920 Plus ..... 247

**Project Management**
829 Microsoft Project 95 ..... 128
768 Primavera SureTrak 2.0 ... 108

**Reference**
842 Microsoft Encarta 97 ..... 134
625 The Ortho Home Gardener's Problem Solver, Books That Work .. 261
624 Wines of the World 3.0, Multicom Publishing ..... 261

**Remote Access**
750 pcAnywhere CE, Symantec ..... 94
835 Symantec PCAnywhere32 7.5 ..... 130

**SAT Tool**
630 Acing the New SAT, Princeton Teaching Associates Software ..... 262

**Scanners**
762 Color PageWiz, Microtek ..... 96
763 FotoTak-6, Spot InnoScan ..... 96
801 HP ScanJet 5p ..... 125
802 Logitech PageScan Color Pro ..... 125

**Screen Capture**
751 ScreenPrint Gold, Software Labs ..... 94

**Search Utility**
853 Symantec Internet FastFind ..... 136

**Server**
822 Compaq ProLiant ..... 128

**Shareware/Freeware**
841 McAfee VirusScan ..... 134

**Software Accelerator**
753 SoftRAM 3.0, Syncronys Softcorp ..... 80

**Software Suite**
- Corel WordPerfect Suite 8 ..... 74

Reader service number — Page

- Office 97 Professional Edition, Microsoft Corp. ... 74
804 Office 97, Microsoft Corp. ..... 126
- SmartSuite 97, Lotus Development ..... 74

**Sound Card**
794 Creative Labs SoundBlaster AWE32 PnP ..... 125

**Special Effects**
770 Adobe After Effects 3.1 .... 110

**Spreadsheet**
806 Microsoft Excel 97 ..... 126

**Storage Cabinet**
- Multi-Media Drawer, Multiform Products ..... 203

**Storage/Backup**
773 Eagle Nest, Exabyte ..... 116
812 HP Colorado Background for Windows 95 by Cheyenne, Hewlett-Packard ..... 127
797 HP Colorado Memory Systems ..... 125
834 Iomega Zip ..... 130

**Surge Protector**
764 Kensington SmarkSocket ..... 96

**Survey Software**
749 SurveyWin, Raosoft ..... 92

**Tax Planning**
- Intuit TurboTax Deluxe .... 134

**Template Software**
769 HotDocs Pro for Windows 95, Capsoft Development Corp. ..... 108

**Training CD-ROM**
846 Mavis Beacon Teaches Typing 5.0, Mindscape .... 134

**Utilities**
761 Nuts & Bolts, Helix Software ..... 88
810 Symantec Norton Utilities 2.0 ..... 126

**Video**
766 Alaris QuickVideo Transport ..... 106
827 Microsoft NetMeeting 2.0 ..... 128
626 VideoDirector Studio 200, Pinnacle Systems ..... 261
759 Video Blaster WebCam, Creative Labs ..... 86

**Voice Email**
748 Voice Plugin, Digital Equipment Corp. ..... 92

**Web Authoring Tool**
862 Microsoft FrontPage 97 ..... 136

**Web Browser**
851 Netscape Navigator 3.0 .... 136

**Web Search Site**
- AltaVista, Digital Equipment Corp. ..... 136
- Yahoo, Yahoo ..... 136

**Web Site**
629 CyberMom, Digital Entertainment ..... 262

**Wireless Communications**
832 Motorola PageWriter ..... 130

**Word Processor**
805 Microsoft Word 97 ..... 126

# TELECOMMUTING & Home Office

**EXPOSITION & CONFERENCE**

October 15–17, 1997
Moscone Convention Center
San Francisco, CA

# Corporate Solutions Through Remote Access

Virtual Offices... Remote Business Locations... Work-at-Home Employees... they're all part of a movement that's reshaping the American workplace. By the year 2000, this shift of the workforce will be 55 million workers strong.

## Productivity-enhancing technology

Telecommuting & Home Office Exposition & Conference offers you the solutions, strategies and products to make this monumental shift possible. You'll see:

- remote access technology
- networking & telecommunications equipment
- internet access providers
- computer hardware & software
- products & services for remote offices
- financial, legal, insurance & management consulting services

## An educational, business-to-business environment

If you're an executive or network manager or facilities manager charged with telecommuting your department, or a current telecommuter or home office worker, Telecommuting & Home Office Exposition & Conference is a must-attend event for you! The conference provides pragmatic tips on costs vs. benefits of telecommuting, technology trends, human resource issues, and more. Corporate case studies and insights from successful home-based workers round out the program.

*Sponsored by:*

FLAGSHIP SPONSOR NetworkWorld · PC WORLD · Forbes · INCOME OPPORTUNITIES · Steelcase · Macworld · ASAP · Vendors' ISDN Association · MOBILE OFFICE ASSOCIATION, INC · IDC/LINK · FAST COMPANY · Mobile Office Vehicles

TELECOMMUTING & HOME OFFICE EXPOSITION & CONFERENCE

*owned by:* IDG WORLD EXPO

*managed by:* MHA EVENT MANAGEMENT

Send more information on Telecommuting & Home Office Exposition & Conference!

PCW

**I am interested in:** ❑ **Attending** ❑ **Exhibiting**

Name _____

Company _____

Address _____

City/State/Zip _____

Phone _____ Fax _____

email _____

Mail to: MHA Event Management, 1400 Providence Highway, P.O. Box 9127, Norwood, MA 02062. Or Fax to: 617-440-0357

**THIS IS NOT A REGISTRATION FORM.**

**For more information, call 800-393-THOE**

**See THOE on the WWW: http://www.mha.com/thoe/**

Circle 221 on reader service card

# Blowout Prices on Leading Products!

# MicroVAR

YOUR SOURCE FOR PC SOFTWARE.

## COMPAQ

### Compaq Deskpro

**CP3377:** 166MHz Pentium® processor, 1.2GB HDD 16MB RAM ..... **$1209**
**CP3448:** 133MHz Pentium® processor, 2.5GB HDD 16MB RAM, 8X CD-ROM ..... **$1309**
**CP3402:** 166MHz Pentium® processor, 1.62GB HDD, 16MB RAM ..... **$1399**
**CP3449:** 200MHz Pentium® processor, 2.5GB HDD, 32MB RAM ..... **$1709**
**CP3459:** 180MHz Pentium® Pro processor, 1.2GB HDD 16MB RAM, 8X CD-ROM ..... **$1739**
**CP3451:** 166MHz Pentium® processor, 2.5GB HDD, 32MB EDO RAM ..... **$1789**
**CP3846:** 180MHz Pentium® Pro processor, 1.6GB HDD, 32MB RAM, 8X CD-ROM ..... **$2109**
**CP4393:** 200MHz Pentium® Pro processor, 2.5GB HDD, 16MB RAM, 8X CD-ROM ..... **$2209**
**CP3473:** 200MHz Pentium® processor, 2.5GB HDD, 32MB RAM, 8X CD-ROM ..... **$2419**

## IBM

### IBM Thinkpads

**CP3900:** 365X, 120MHz Pentium®, 810MB, 10.4" SVGA TFT, 2625-3R9 ..... **$1299**
**CP3556:** 365X, 120MHz Pentium®, 810MB, 10.4" SVGA TFT, 2625-3E9 ..... **$1299**
**CP4124:** 365X, 133MHz Pentium®, 1.08GB, Upgradable, 11.3" SVGA DSTN, 2625-2R9 ..... **$1379**
**CP2899*:** 365E, Cyrix 5x86/100, 540MB, 10.4" VGA DSTN, 2625-W9A ..... **$1399**
**CP3562:** 365XD,120MHz Pentium®, 810MB, 4XCD, 10.4" SVGA TFT, 2625-4E9 ..... **$1399**
**CP4180:** 365XD, 120MHz Pentium®, 1.08GB, 6XCD, 10.4" SVGA TFT, 2625-GE9 ..... **$1699**
**CP4181:** 365XD, 133MHz Pentium®, 1.35GB, 6XCD, 11.3" SVGA DSTN, 2625-FE9 ..... **$1999**
**CP2907*:** 760EL, 120MHz Pentium®, 1.08GB, 8MB/72MB, Upgradable, SVGA, 9547-U4F ..... **$3199**
**CP3557:** 760EL, 133MHz Pentium®, 2.1GB, 16MB/80MB, Upgradable, SVGA, 9547-U4G ..... **$3999**

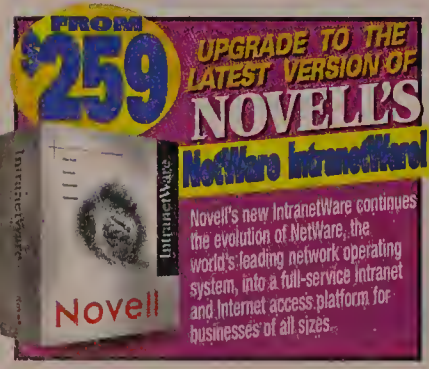
*While supplies last!

## TOSHIBA

### Toshiba Laptops

**RCP3879:** T405CS, 75MHz Pentium®, 772MB, 8MB, 10.4" DSTN ..... **$999***
**CP3216:** T500CS, 120MHz, 1.2GB HDD,12.1" SVGA DSTN .... **$1399**
**CP3907:** T430CDS, 120MHz Pentium®, 1.2GB, 10X CD, 16MB, 11.3" SVGA DSTN ..... **$1679**
**BN4228:** T420CDT, 100MHz Pentium®, 1.2GB, 6X CD, 8MB, 11.3" SVGA TFT, 33.6 ..... **$1999**
**BN4213:** T430CDT, 120MHz Pentium®, 1.2GB, 10X CD, 16MB, 11.3" TFT ..... **$2199**
**CP3217:** T500CDT, 120MHz, 1.2GB HDD,12.1" SVGA TFT, 6X CD ..... **$2899**
**CP3902:** T510CDT, 133MHz, 2.1GB HDD 12.1" SVGA TFT, 10X CD ..... **$3399**
**CP3514:** 730CDT, 150MHz, 2.02GB HDD, 16MB 12.1" XGA TFT, 6X CD ..... **$4299**
**CP4139:** 730XCDT, 150MHz MMX Pentium®, 2.02GB HDD 12.1" TFT, 10X CD ..... **$4799**
**CP4138:** 740CDT, 166MHz MMX Pentium®, 2.02GB HDD, 13.3" TFT, 10X CD ..... **$5799**

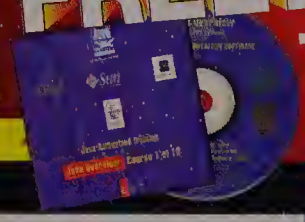
*While supplies last!



- Visa and MasterCard accepted. Your credit card will not be charged until your order is shipped.
- Purchase orders subject to credit approval.
- All products covered by 30-day limited warranty. Defective software replaced immediately. Hardware replaced or repaired at our discretion.
- Connecticut, New Jersey, Illinois and Ohio residents add applicable sales tax.
- Orders for in-stock items placed by 12:00 midnight (E) weekdays, (barring system failure, etc.) ship overnight by Airborne Express. (Some areas require an extra day).
- We reserve the right to limit quantities.
- Shipping charge $9.95 per order up to 7 lbs. $1.25 per lb. above 7 lbs.
- UPS ground service also available at current UPS rates plus $2.95 handling charge per order except COD. UPS orders placed by 3:00 p.m. (E) weekdays, ship same day.
- Actual freight charges apply for computers, hard disks, Bernoulli's, tape backups, monitors, and printers.
- Alaska, Hawaii, outside continental U.S., APO/FPO call for information.
- Item availability an price subject to change without notice.
- Some products not available outside U.S. Please call for more information.
- Not responsible for errors or omissions.

# EHOUSE

HARDWARE AND PERIPHERALS



**FREE! JAVA TUTORIAL**

*You pay only $2.95 shipping & handling. Shipped in promotional packaging. While supplies last. Ask for item #AAA0496.

## COLOR NOTEBOOK BLOWOUT!

AS LOW AS $1299!

**IBM ThinkPad 365X Features:**

- 365X features a 120MHz Pentium® processor, 8MB RAM, 810MB hard drive, and a 10.4" TFT color display.

*Ask for item #CP3556*

intel inside

IBM®

### NEC VERSA 2405

ONLY $999*

RCP3551

- 100MHz Pentium® Processor
- 810MB hard disk drive
- 8MB RAM
- 11.3" SVGA DSTN

*While supplies last.

NEC

### IBM PC300XL PENTIUM® II DESKTOP

- P2/233MHz Pentium® Processor
- 32MB RAM
- 2.5GB Hard Drive
- Windows 95

*While supplies last. CP4768

Monitor sold separately.

IBM

ONLY $2425!

### TOSHIBA TECRA 700CS

120MHz ONLY $1499

- 120MHz Pentium® processor
- 1.2GB hard disk drive
- 8MB RAM
- 11.3" SVGA DSTN

CP2761

intel inside

TOSHIBA

### SEAGATE MEDALIST™

- 1.2 GB IDE HARD DRIVE

ONLY $199.95!

DR5652

Seagate

### IOMEGA JAZ DRIVE

INTERNAL DRIVE ONLY $299.95!

INCLUDES DISK!

EXTERNAL SHOWN

DR4840

### HEWLETT PACKARD DESKJET 672C

ONLY $199.95!

PR12302

- 4ppm
- 600X600dpi black
- 600X300dpi color

### NEW! LS-120 Diskette Drive from Precision Instruments

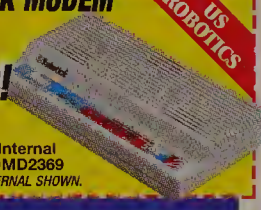
PURCHASE DRIVE WITH 10 IMATION DISKETTES AND SAVE $30!

ONLY $329.95!

BN4253

### SPORTSTER 56K MODEM

INTERNAL FOR ONLY $197.99!



U.S. Robotics

Internal DMD2369

EXTERNAL SHOWN.

### NEW! DVD TECHNOLOGY

- Watch theater-style video
- Retrieve up to 7 times more data than standard CD-ROM!
- Includes MPEG card!
- Listen to hi-fi audio

CREATIVE

$499.99!

DR6307

### OLYMPUS DIGITAL CAMERA

OLYMPUS

ONLY $599!

INP0979

## Storage Warehouse

IDE Hard Drives Starting at $199.95

### SEAGATE HARD DRIVES (IDE)

| | |
|---|---|
| DR5652: ST31276A, 1275MB | $199.95 |
| DR5767: ST32132A, 2113MB | $249.95 |
| DR5655: ST52520A, 2560MB | $259.95 |
| DR6333: ST33240A, 3240MB | $289.95 |
| DR6331: ST36450A, 6450MB | $539.95 |

### WESTERN DIGITAL HARD DRIVES (IDE)

| | |
|---|---|
| DR6112: Caviar 11200, 1.2GB | $199.95 |
| DR5594: Caviar 21600, 1.6GB | $219.95 |
| DR5595: Caviar 22100, 2.1GB | $239.95 |
| DR5359: Caviar 33100, 3.1GB | $279.95 |
| DR5972: Caviar 34000, 4.0GB | $389.95 |

### IBM HARD DRIVES (IDE)

| | |
|---|---|
| DR5732: Deskstar, 2.1GB | $259.95 |
| DR5731: Deskstar, 3.24GB | $349.95 |

### QUANTUM HARD DRIVES (IDE)

| | |
|---|---|
| DR5842: Fireball 31280TM, 1.2GB | $219.95 |
| DR5841: Fireball 32110TM, 2.1GB | $279.95 |
| DR5840: Fireball 32550TM, 2.5GB | $299.95 |
| DR5837: Fireball 33200TM, 3.2GB | $329.95 |
| DR5836: Fireball 33840TM, 3.8GB | $359.95 |

### MAXTOR HARD DRIVES (IDE)

| | |
|---|---|
| DR6030: Maxtor K0182100A, 2.1GB | $219.95* |
| DR6069: Maxtor K0182500A, 2.5GB | $239.95* |
| DR5661: Maxtor K0183500A, 3.5GB | $299.95* |
| DR6390: Maxtor K0184300A, 4.3GB | $369.95* |
| DR5880: Maxtor K0185120A, 5.1GB | $419.95* |

*Price reflects manufacturer's $30 Mail-in rebate. Ask for AA0747. Offer expires 6/30/97.

### MICROPOLIS HARD DRIVES (SCSI)

| | |
|---|---|
| DR6091: 4345NS, 4.55GB | $899.95 |
| DR6089: 4345WS, 4.55GB | $949.95 |
| DR6088: 3391NS, 9.1GB | $1599.95 |
| DR6093: 3391WS, 9.1GB | $1599.95 |

### QUANTUM HARD DRIVES (SCSI)

| | |
|---|---|
| DR5835: Fireball 31280TM, 1.2GB | $299.95 |
| DR5834: Fireball 32110TM, 2.1GB | $349.95 |
| DR5833: Fireball 33200TM, 3.2GB | $399.95 |
| DR5832: Atlas II 34550AL, 4.5GB | $989.95 |

### SEAGATE HARD DRIVES (SCSI)

| | |
|---|---|
| DR5638: ST32171N, 2.15GB | $569.95 |
| DR5640: ST32171W, 2.15GB | $629.95 |
| DR5639: ST34371N, 4.35GB | $879.95 |
| DR5636: ST34371W, 4.35GB | $899.95 |
| DR5641: ST19171N, 9.1GB | $1619.95 |
| DR5637: ST19171W, 9.1GB | $1669.95 |

### IOMEGA DITTO TAPE DRIVES

| | |
|---|---|
| DR4922: Ditto 3200 Int., 3200MB | $179.95† |
| DR4907: Ditto 3200 Ext., 3200MB | $229.95† |
| DR5402: Ditto 2GB Int., 2GB | $99.95† |
| DR5401: Ditto 2GB Ext., 2GB | $149.95† |

†Price reflects $50 mfr. mail-in rebate. Ask for rebate certificate AA0702. Rebate expires 7/31/97.

### IOMEGA JAZ DRIVE

| | |
|---|---|
| DR4840: Internal, 1GB | $299.95 |
| DRI1119: External, 1GB | $399.95 |
| ME6478: 1.0GB Jaz Disk | $124.95* |

*Quantity pricing available.

### IOMEGA ZIP DRIVE

| | |
|---|---|
| DR4602: Parallel Port | $149.95 |
| DRI1050: SCSI | $149.95 |
| DR5279: Insider SCSI | $149.95 |
| ME6387: 100MB Diskette | $17.95* |

*Quantity pricing available.

### HP/COLORADO

| | |
|---|---|
| DR5623: T3000 Int., 8GB | $189.95 |
| DR5624: T4000ES Ext., 8GB | $479.95 |

### PINNACLE MICRO

| | |
|---|---|
| DR5513: RCD 4x4 Internal | $759.00 |
| DR5512: RCD 4x4 External | $859.00 |
| DR6051: Apex 4.6GB Internal | $1799.00 |
| DR6050: Apex 4.6GB External | $1899.00 |

### SEAGATE TAPE DRIVES

| | |
|---|---|
| DR4709: TapeStor 800 Int., 800MB | $99.95** |
| DR5707: TapeStor 800 Ext., 800MB | $129.95 |
| DR4769: TapeStor 3200 Int., 3200MB | $179.95** |
| DR5708: TapeStor 3200 Ext., 3200MB | $219.95 |
| DR5180: TapeStor 8000 Int. SCSI, 8GB | $369.95** |
| DR5182: TapeStor 8000 Ext. SCSI, 8GB | $469.95** |
| DR5181: TapeStor 8000 Int. IDE, 8GB | $369.95** |

**Includes cartridge.

## Free Catalog Subscription

Check the appropriate box(es) to receive a free, one-year subscription and mail this coupon to:
**1720 Oak Street, P.O. Box 3014, Lakewood, N.J. 08701-3014**

Name:

Address: Apt.:

City: State: Zip:

○ MicroWAREHOUSE ○ MicroSYSTEMS WAREHOUSE

○ MacWAREHOUSE ○ Data Comm WAREHOUSE™

*(Expect to receive your next issue within 4-6 weeks).*

©Copyright 1997 MicroWarehouse, Inc. MacWAREHOUSE® is a division of MicroWarehouse, Inc. MacWAREHOUSE® and MicroWarehouse® are registered servicemarks of MicroWarehouse, Inc.

PPW7

Get it Overnight — Order it Today and Use it Tomorrow!

**To order, call toll-free 24 hours a day, 7 days a week**

# 1-800-344-9314

On the Internet: http://www.warehouse.com

Fax: 908-905-5245

Order until 12:00 midnight (E) weekdays for overnight delivery of "in stock" items — only $9.95!*

*Shipping charge $9.95 per order up to 7 lbs., $1.25 per lb. over 7lbs.

CALL FOR A FREE CATALOG!

# What Your Next PC Will Look Like

ONE OF THE WONDERFUL THINGS about computers is how quickly the barn burner you bought last week becomes a bucket of decaying silicon. Thanks to PC 98, the standards-setting initiative from Microsoft and Intel (with help from Compaq), next year's computers will differ significantly from what you're using now. In other words, PCs will become simpler, faster, and more flexible.

That's the official story, anyway. The idea is to make you believe you need a new PC. Think you've just bought a hot machine? Consider this: Before a system can receive a "Designed for Windows" logo next year, it will need a 200-MHz Pentium MMX processor and 32MB of RAM—and that's the *minimum* requirement.

The goal of PC 98 is a computer that acts like a consumer electronics unit (or, dare we say, a Macintosh).

## SUCK UP THOSE CYCLES

SO YOU MAY WELL NEED a new machine, particularly if you plan to do anything with that incredible cycle-sucker, digital video. With real-time data streams traveling in and out of our PCs, speedier ways of handling data are crucial.

For openers, say good-bye to slow, clunky ISA slots. They've been a fixture ever since the IBM PC AT, but after PC 98, ISA slots will stick around only to service legacy devices like parallel ports, keyboards, and floppy drives. Otherwise, like 5¼-inch floppies and VESA cards, ISA slots will take up residence in the Home for the Outmoded.

That's not the only big change. The Universal Serial Bus built into many new PCs is fast enough for most purposes, but it doesn't cut the mustard with high-speed data sources like hard drives or digital video cameras. For that, the much faster IEEE 1394 bus (aka Firewire) will be PC 98's standard-bearer.

PCI will remain, but another new motherboard bus, the Accelerated Graphics Port, will become a graphics standard. Sound cards will move to PCI or disappear entirely, replaced by digital signals that travel up the USB wires and get decoded inside the speakers. A developing standard called Device Bay should let you plug and unplug components, so you can, say, swap drives between your laptop and desktop.

The goal is a PC that acts like a consumer electronics unit (or, dare we say, a Macintosh). Most add-ons will attach from the outside, thanks to the daisy-chainable USB and 1394 buses. Eventually, standard devices will be replaced by ones that work with the new buses.

## ALMOST A MAC?

SURE, THE PC 98 INITIATIVE is self-serving for Intel and partners, who want to sell more of their stuff. It's also about time. The PC has never come close to matching the Mac's ease of hooking up peripherals. Connecting SCSI devices has been a chronic pain. The number of parallel devices competing for a PC's single port has become a sick joke. And if I never deal with another IRQ conflict, that's soon enough for me. But this means peripherals makers must stop using ISA cards; unfortunately, even companies as savvy as Hewlett-Packard still do.

With a theoretically more stable platform, Windows itself should work more seamlessly. It had better. The entire initiative depends on support from the upcoming Memphis and NT 5.0 versions of Windows, but getting hardware, software, and peripherals in sync isn't easy. Last year, machines with USB ports arrived before Windows or peripherals supported them. This year, hardware for the new ACPI power management standard, which lets Windows make your PC instantly wake up and do tricks, will almost certainly be ready before the new operating systems that make it work.

Although the standard setters are trying to ensure that legacy programs will still work, I'd be flabbergasted if many DOS games don't encounter problems. I'll gladly pay that price for systems that are truly silent when they're "sleeping" and quiet when they're awake. But if I'd just bought a new scanner that came with an ISA interface card, I'd be plenty unhappy.

As I write, the standards are still being developed (they're available at developer.intel.com/design/pc98/). There may yet be time to cast your vote to save the ISA slots, but do me a favor: Don't.

PC World *contributing editor Stephen Manes is a columnist for the* New York Times *and coauthor of* Gates: How Microsoft's Mogul Reinvented an Industry *(Touchstone/Simon & Schuster, 1994, 800/223-2348).* ■

IDG INTERNATIONAL DATA GROUP

*PC World*™ (ISSN 0737-B939) is published monthly at $29.90 for one year (12 issues), $59.80 for two years (24 issues), $89.70 for three years (36 issues) by PC World Communications, Inc., 501 Second St. #600, San Francisco, CA 94107. Foreign orders must be prepaid in U.S. funds with additional postage. Add $20 per year for Canada and Mexico; add $46 per year for airmail for all other countries. Canadian GST Registration #R1246696B0. Periodicals postage paid at San Francisco and additional mailing offices. Canada Post International Publications Mail Product, (Canadian Distribution) Sales Agreement No. 0463566. POSTMASTER: Send address changes to *PC World*, Subscription Dept., P.O. Box 55029, Boulder, CO B032B-5029. Editorial and business offices: 501 Second St. #600, San Francisco, CA 94107, 415/243-0500. Copyright © 1997, PC World Communications, Inc. All rights reserved. The trademark *PC World* is owned by International Data Group and used under license by PC World Communications, Inc. *PC World Top 20*™, *Top 20*™, *PC World Top 10*™, *Top 10*™, *PC World Top 100*™, *Top 100*™, and *Consumer Watch*™ are trademarks of International Data Group, Inc., and used under license by PC World Communications, Inc. Printed in the United States.

PHOTOGRAPH: ERIK BUTLER

## DELL DIMENSION DESKTOPS FOR BUSINESS

**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ Microsoft® Office 97 Small Business Edition ◆ MS® Windows® 95 ◆ MS Mo
◆ 3 Year Limited Warranty† with 1 Year On-site^Δ Service
**Upgrades:** ◆ 3Com® 3C905 Fast EtherLink® XL 10/100 PCI Card, add $109. ◆ 4/8GB EIDE TR4 TBU, add $199. ◆ HP LaserJet 6Pse Printer, $799. ◆ 3-Pak of Zip 100MB Cartrid

| ***NEW* DELL DIMENSION® XPS H266**<br>266MHz PENTIUM® II PROCESSOR | ***NEW* DELL DIMENSION XPS H266**<br>266MHz PENTIUM II PROCESSOR | ***NEW* DELL DIMENSION XPS M233s**<br>233MHz PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY | **DELL DIMENSION XPS M200s**<br>200MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY |
|---|---|---|---|
| Common features listed above plus:<br>• 64MB EDO Memory with ECC<br>• *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)<br>• 1000HS Trinitron® Monitor (15.9" v.i.s.)<br>• Matrox Millennium 4MB WRAM Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Integrated Yamaha 16-Bit Sound<br>• Altec ACS-290 Speakers w/Subwoofer<br>• Iomega Zip 100MB IDE Internal Drive with One Cartridge | Common features listed above plus:<br>• 32MB EDO Memory<br>• *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)<br>• *NEW* 1000LS Monitor (15.9" v.i.s.)<br>• Matrox Millennium 4MB WRAM Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Integrated Yamaha 16-Bit Sound<br>• Altec ACS-90 Speakers<br>• Iomega Zip 100MB IDE Internal Drive with One Cartridge | Common features listed above plus:<br>• 32MB SDRAM Memory<br>• 3.2GB Hard Drive (12ms)<br>• *NEW* 1000LS Monitor (15.9" v.i.s.)<br>• *NEW* 4MB EDO ViRGE 3D Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Sound Blaster 16 WaveSynth Wavetable Sound<br>• Altec ACS-90 Speakers<br>• Iomega Zip 100MB IDE Internal Drive with One Cartridge<br>★ *Upgrade to 64MB SDRAM, add $239.* | Common features listed above plus:<br>• 32MB SDRAM Memory<br>• 3.2GB Hard Drive (12ms)<br>• 800HS Trinitron Monitor (13.7" v.i.s.)<br>• *NEW* 4MB EDO ViRGE 3D Video Card<br>• 16X Variable EIDE CD-ROM Drive<br>• AWE32 Wavetable Upgrade Card<br>• Altec ACS-90 Speakers<br>★ *Upgrade to a 4.3GB Hard Drive (9.5ms), add $60.*<br>★ *Upgrade to a 1000LS Monitor (15.9" v.i.s.), add $119.* |
| **$3599**<br>Business Lease◊: $130/Mo.<br>Order Code #500609 | **$2999**<br>Business Lease: $111/Mo.<br>Order Code #500608 | **$2499**<br>Business Lease: $92/Mo.<br>Order Code #500607 | **$2199**<br>Business Lease: $81/Mo.<br>Order Code #500606 |

# OUR NEW SYSTEMS AREN
# THEY'RE INCRE

## DELL DIMENSION DESKTOPS FOR HOME

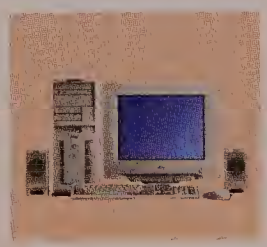
**Common features:** ◆ Mini Tower Model ◆ 512KB L2 Cache ◆ 2 Universal Serial Bus (USB) Ports ◆ 56K Capable* U.S. Robotics x2 Telephony Modem
◆ MS Home Essentials ◆ MS Windows 95 ◆ MS Mouse (MS IntelliMouse on XPS Systems) ◆ 3 Year Limited Warranty with 1 Year On-site Service
**Upgrades:** ◆ HP DeskJet 820Cse Color Printer, add $299. ◆ Iomega Zip 100MB IDE Internal Drive w/One Cartridge, add $99. ◆ 3 yrs. On-site Service, add $99.

| ***NEW* DELL DIMENSION XPS H266**<br>266MHz PENTIUM II PROCESSOR | ***NEW* DELL DIMENSION XPS M233s**<br>233MHz PENTIUM PROCESSOR W/MMX | **DELL DIMENSION XPS M200s**<br>200MHz PENTIUM PROCESSOR W/MMX | **DELL DIMENSION M166a**<br>166MHz PENTIUM PROCESSOR W/MMX |
|---|---|---|---|
| Common features listed above plus:<br>• 64MB EDO Memory with ECC<br>• *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)<br>• 1000HS Trinitron Monitor (15.9" v.i.s.)<br>• *NEW* Matrox Millennium II 8MB WRAM Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Yamaha 32 Wavetable Sound<br>• Altec ACS-490 Full Dolby® Surround Sound Speakers with Subwoofer<br>• Iomega Zip 100MB IDE Internal Drive with One Cartridge | Common features listed above plus:<br>• 32MB SDRAM Memory<br>• *NEW* 6.4GB Hard Drive with 512KB Cache (9.5ms)<br>• 1000HS Trinitron Monitor (15.9" v.i.s.)<br>• Matrox Millennium 4MB WRAM Video Card<br>• *NEW* 24X Variable EIDE CD-ROM Drive<br>• Sound Blaster 16 WaveSynth Wavetable Sound<br>• Altec ACS-290 Speakers with Subwoofer<br>★ *Upgrade to 64MB SDRAM, add $239.* | Common features listed above plus:<br>• 32MB SDRAM Memory<br>• 4.3GB Hard Drive (9.5ms)<br>• *NEW* 1000LS Monitor (15.9" v.i.s.)<br>• *NEW* 4MB EDO ViRGE 3D Video Card<br>• 16X Variable EIDE CD-ROM Drive<br>• Sound Blaster 16 WaveSynth Wavetable Sound<br>• Altec ACS-90 Speakers<br>★ *Upgrade to a 6.4GB Hard Drive with 512KB Cache (9.5ms), add $75.*<br>★ *Upgrade to Altec ACS-290 Speakers with Subwoofer, add $75.* | Common features listed above plus:<br>• 16MB SDRAM Memory<br>• 2.1GB Hard Drive (12ms)<br>• 800HS Trinitron Monitor (13.7" v.i.s., .26dp)<br>• 2MB EDO ViRGE 3D Video<br>• 16X Variable EIDE CD-ROM Drive<br>• Sound Blaster 16 PnP Sound Card<br>• Altec ACS-90 Speakers<br>★ *Upgrade to 32MB SDRAM, add $119.*<br>★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.* |
| **$3899**<br>Order Code #500604 | **$2999**<br>Order Code #500603 | **$2399**<br>Order Code #500602 | **$1899**<br>Order Code #500601 |

**Thousands of other custom configurations**

‡Non-discountable promotional pricing. †For a complete copy of our Guarantees or Limited Warranties, please write Dell USA L.P., One Dell Way, Round Rock, TX 78682. ◊Leasing arranged by third-party leasing companies to qualified customers. *System weight with floppy drive or CD-ROM in options bay. ^Δ On-site service provided by an independent third-party provider. May not be available in certain remote areas. x2 products are capable of 56Kbps downloads. Due to FCC rules that restrict power output, however, current download speeds are limited to 53Kbps. Upload speeds are limited to 33.6 Kbps. Actual speeds may vary depending on line conditions. ★Prices and specifications valid in the U.S. only and subject to change without notice. Intel, the Intel Inside logo, LANDesk and Pentium are registered trademarks and MMX and EtherExpress are trademarks of Intel Corporation. MS, Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. 3Com and EtherLink are registered trademarks of 3Com Corporation. Trinitron is a registered trademark of Sony Corporation. DirectLine is a service mark of Dell Computer Corporation. ©1997 Dell Computer Corporation. All rights reserved.

**GET FREE DELL NEWS, RIGHT AT YOUR DESKTOP!**
**With DirectNews, Dell's free priority email bulletin, you can get pricing, product announcements, and limited time offers emailed direct to your computer, as soon as they become available. This money and time saving bulletin is available exclusively by subscription. And it's easy to subscribe. Just email us at listserver@dell.com with the message "join ddn" And then watch your mailbox for the inside scoop on Dell's latest offers.**



use (MS IntelliMouse on XPS System)

ges, add $39.

**DELL DIMENSION M166a**
166MHz PENTIUM PROCESSOR WITH MMX TECHNOLOGY

Common features listed above plus:
- 16MB SDRAM Memory
- 2.1GB Hard Drive (12ms)
- 15LS Monitor (13.7" v.i.s.)
- 2MB EDO ViRGE 3D Video
- 16X Variable EIDE CD-ROM Drive

★ *Upgrade to 32MB SDRAM, add $119.*
★ *Upgrade to a 3.2GB Hard Drive (12ms), add $49.*
★ *Upgrade to an 800HS Trinitron Monitor (13.7" v.i.s., .26dp), add $49.*

**$1699**
Business Lease: $63/Mo.
Order Code #500605

## DESKTOP SOFTWARE DESCRIPTIONS

**MS Office 97 Small Business Edition (SBE) includes:**
- Word 97
- Excel 97
- Publisher 97
- Outlook 97
- Automap Streets Plus
- Small Business Financial Mgr 97
- Internet Explorer 3.0

Plus your choice of Bookshelf or Encarta

**MS Home Essentials includes:**
- Word 97
- Works 4.0
- Encarta 97
- Greetings Workshop
- Arcade
- Internet Explorer 3.0

## *NEW* DELL POWEREDGE SERVERS

**Common features:** ◆ 512KB L2 Cache ◆ Integrated Ultra-Wide SCSI-3 Controller ◆ Intel® EtherExpress™ Pro/100 NIC ◆ Intel LANDesk® Server Manager v2.5x ◆ Dell Server Assistant CD ◆ 3 Year Limited Warranty†

**DELL® POWEREDGE® 2200 SERVER**
266MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 96MB ECC EDO Memory
- 4GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- MS Windows NT® Server 4.0

★ *Upgrade to a 9GB Ultra-Wide SCSI-3 Hard Drive, add $450.*
★ *Upgrade to 128MB ECC EDO Memory, add $220.*

**$4999**
Business Lease: $179/Mo.
Order Code #250072

**DELL POWEREDGE 2200 SERVER**
233MHz PENTIUM II PROCESSOR
Dual Processor Capable, RAID Capable

Common features listed above plus:
- 32MB ECC EDO Memory
- 2GB Ultra-Wide SCSI-3 Hard Drive [7200 RPM, 8ms] (27GB Max.)
- 8X SCSI CD-ROM Drive
- 3Com OfficeConnect Hub 8/TPC

★ *Upgrade to 64MB Memory, add $239.*
★ *Upgrade to a 4GB Ultra-Wide SCSI-3 Hard Drive, add $320.*
★ *4/8GB SCSI DAT Tape Backup, add $749.*

**$3249**
Business Lease: $119/Mo.
Order Code #250070

# 'T JUST INCREDIBLY FAST. EDIBLY PRICED.

## DELL LATITUDE NOTEBOOKS

**Common features:** ◆ 256KB L2 Pipeline Burst Cache ◆ Options Bay accepts 12X Variable CD-ROM, 3.5" Floppy Drive (both included), or Optional 2nd Li-Ion Battery ◆ PCI Bus with *NEW* 128-bit Graphics Accelerator with 64K Colors ◆ Integrated 16-bit Stereo Sound ◆ Smart Lithium Ion Battery ◆ Microsoft Windows 95 ◆ IrDA 1.0 Standard Compliant ◆ Touchpad ◆ Under 7 Pounds* ◆ Extendable 1 Year Warranty†

***NEW* DELL LATITUDE® LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 40MB RAM (72MB Max.)
- 2.1GB Hard Drive
- 2nd Lithium Ion Battery
- MS Office 97 Small Business Edition

★ *Upgrade to 72MB RAM, add $299.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *3Com LAN+ 33.6 Modem PC Card, add $349.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Leather Carrying Case, add $129.*

**$3999**‡
Business Lease: $144/Mo.
Order Code #800130

***NEW* DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 24MB RAM (72MB Max.)
- 2.1GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $199.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Leather Carrying Case, add $129.*
★ *3Com 10Base-T Network Card, add $139.*
★ *Dell Latitude LM Port Replicator, add $159.*

**$3599**‡
Business Lease: $130/Mo.
Order Code #800132

***NEW* DELL LATITUDE LM M166ST**
166MHz PENTIUM PROCESSOR W/MMX

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive
- MS Office 97 Small Business Edition

★ *Upgrade to 40MB RAM, add $299.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Dell Latitude LM Port Replicator, add $159.*
★ *Nylon Carrying Case, add $69.*

**$3299**‡
Business Lease: $122/Mo.
Order Code #800140

**DELL LATITUDE LM P133ST**
133MHz PENTIUM® PROCESSOR

Common features listed above plus:
- 12.1" SVGA Active Matrix Display
- 16MB RAM (72MB Max.)
- *NEW* 1.6GB Hard Drive

★ *Upgrade to 24MB RAM, add $100.*
★ *Upgrade to a 2.1GB Hard Drive, add $200.*
★ *2nd Lithium Ion Battery, add $199.*
★ *Motorola 33.6 Fax Modem, add $169.*
★ *Nylon Carrying Case, add $69.*
★ *3Com 10Base-T Network Card, add $139.*

**$2799**‡
Business Lease: $104/Mo.
Order Code #800138

**available. What can we build yours to do?**

MMX™ intel inside pentium® PROCESSOR

TO ORDER TOLL-FREE
**800-545-7141**
TO ORDER ONLINE
www.dell.com/buydell

Mon-Fri 7am-9pm CT
Sat 10am-6pm CT
Sun 12pm-5pm CT
In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D
Keycode #03261

DELL®

# A SERIOUSLY FAST CHIP. AN INCREDIBLY FAST CD-ROM. FRIGHTENINGLY FAST VIDEO. DO YOU SENSE A TREND HERE?

***NEW* DELL® LATITUDE® LM M166ST**
166MHz PENTIUM® PROCESSOR WITH MMX™ TECHNOLOGY

- ★ **12.1" SVGA Active Matrix Display**
- ★ **16MB RAM (72MB Max.)**
- 256KB L2 Pipeline Burst Cache
- ★ ***NEW* 1.6GB Hard Drive**
- Options Bay accepts 12X Variable CD-ROM, 3.5" Floppy Drive (both included) or Optional 2nd Lithium Ion Battery
- ★ **PCI Bus with *NEW* 128-bit Graphics Accelerator with 64K Colors**
- Integrated 16-bit Stereo Sound
- Smart Lithium Ion Battery
- ★ **MS® Office 97 Small Business Edition**
- Microsoft® Windows® 95
- IrDA 1.0 Standard Compliant
- Touchpad/Under 7 Pounds*
- Extendable 1 Year Warranty†
- ★ *Upgrade to 40MB RAM, add $299.*
- ★ *Upgrade to a 2.1GB Hard Drive, add $200.*
- ★ *2nd Lithium Ion Battery, add $199.*
- ★ *Motorola 33.6 Fax Modem, add $169.*

**$3299**

Business Lease◊: $122/Mo.
Order Code #800140

**NOW WITH MMX™ TECHNOLOGY.** According to the trendspotters, things are speeding up in the notebook business. For proof, look at the new Dell Latitude LM M166ST. Its heart beats at an astounding 166MHz, thanks to its new Mobile Pentium® processor with MMX™ technology for gut-wrenching multimedia. It also has a 12X Variable CD-ROM drive – again, among the fastest you can get in a portable. Then there's the new 128-bit Graphics Accelerator for faster and better color resolution and 64,000 colors. To order, call today. But do it fast. You don't want to lag behind the trend, do you?

MMX™ intel inside pentium® PROCESSOR

DELL®

**TO ORDER TOLL-FREE**
**800-553-6026**

**TO ORDER ONLINE**
www.dell.com/buydell

Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT In Canada,*call 800-232-6978
GSA Contract #GS-35F-4076D

Keycode #03260

# WHEN IT COMES TO WINNING AWARDS, THERE SIMPLY IS NO COMPETITION.

PC MAGAZINE EDITORS' CHOICE AWARD - XPS M200s
PC COMPUTING 2-time 5 STAR AWARD - XPS M200s
PC WORLD BEST BUY - XPS M200s
PC COMPUTING MVP WORKHORSE DESKTOP - XPS
PC MAGAZINE EDITORS' CHOICE AWARD - XPS Pr
MAGAZINE EDITORS' CHOICE AWARD - XPS P2
UTING 4 STAR AWARD - XPS Pro200n
EDITORS' CHOICE AWARD - XPS P1
HARDWARE AWARDS - X

PC WORLD 8-time POW
WINDOWS MAGAZINE

**DELL DIMENSION® XPS M233s**
233MHz PENTIUM® PROCESSOR
**WITH MMX™ TECHNOLOGY**

- Mini Tower Model
- ★ **32MB SDRAM Memory**
- 512KB Single Bank Pipeline Burst Cache
- ★ **3.2GB Hard Drive (12ms)**
- *NEW* 1000LS Monitor (15.9" v.i.s.)
- 4MB EDO ViRGE 3D Video Card
- ★ ***NEW* 24X Variable EIDE CD-ROM Drive**
- Sound Blaster 16 WaveSynth Wavetable Sound
- Altec ACS-90 Speakers
- ★ **MS® Office 97 Small Business Edition plus Bookshelf**
- MS Windows® 95/MS IntelliMouse
- 3 Year Limited Warranty† with 1 Year On-site^Δ Service
- ★ *Upgrade to 64MB SDRAM, add $239.*
- ★ *Upgrade to a 1000HS Trinitron® Monitor (15.9" v.i.s., .26dp, 1600x1200 max. res.), add $224.*
- ★ *Upgrade to Altec ACS-290 Speakers with Subwoofer, add $75.*

**$2399**

Business Lease◊: $89/Mo.
Order Code #500610

**141 AWARDS ACROSS THE ENTIRE DIMENSION LINE.**

What do the awards given by *PC Magazine, PC Computing, PC World, Windows Magazine* and *Computer Shopper* (over 140 honors since 1/96!) have to do with you? It means you'll now be running dramatic multimedia presentations on the high-end systems that have earned designations such as *PC Magazine* Editors' Choice for Best Business PC. It means you'll be cruising the Internet on systems designated MVP and 5-Star Award winners by *PC Computing*. And it means a whole lot more since they're also awarding our great reliability and price. Which is what a firm commitment to cutting edge engineering will get you. Just take a look at this brand new Dell Dimension XPS system with a 233MHz Pentium® processor with MMX™ Technology – 15% more raw speed than its 200MHz counterpart! So give us a call and let us build you a winner. After all, if you're judged by the company you keep, shouldn't you hang with the champs?

MMX™ intel inside pentium® PROCESSOR

DELL®

**TO ORDER TOLL-FREE**
**800-553-6023**
**TO ORDER ONLINE**
www.dell.com/buydell

Mon-Fri 7am-9pm CT • Sat 10am-6pm CT
Sun 12pm-5pm CT In Canada,* call 800-232-6978
GSA Contract #GS-35F-4076D

Keycode #03259